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ABSTRACT

The present issue of the Bulletin comprises articles that review broadly the development of higher education in 10 countries of the Asian region. Though not all countries are covered in the articles, those that are represent developments that have parallels in many other countries of the region. The countries covered by the articles are Afghanistan, Burma, Ceylon, India, Iran, Japan, Korea, Malaysia, the Phillippines, and Thailand. A bibliographical supplement is contained within the text of the document, and a separate supplement presents an annotated list of documents on education in Asia. (HS)

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"Then, I said, the business of us who are the founders of the State will be to compel the best minds to attain that knowledge which we have already shown to be the greatest of all - they must continue to ascend until they arrive at the good; but when they have ascended and seen enough we must not allow them to do as they do now.

"What do you mean?

"I mean that they remain in the upper world; but this must not be allowed; they must be made to descend again among the prisoners in the cave, and partake of their labours and honours, whether they are worth having or not."

Plato, *The Republic*

INTRODUCTION

The present issue of the Bulletin brings together articles which review broadly the development of higher education in ten countries of the Asian region. [1] Though not all countries are covered in the articles, those which are, represent developments that have parallel in many other countries of the region.

The context in which higher education has developed in Asia is extremely varied, but certain common patterns are discernible, more by groups of countries than continentally; and more by problems to which solutions have yet to be found rather than by the course of development in the past.

The traditions of higher learning in Asia reach back many centuries, and centres of higher education were an essential part of the great religious and philosophical systems such as Buddhism, Confucianism, Hinduism, and Islam which have held sway in the Asian countries. Higher education in the present-day form is however an importation from Europe. Institutions of higher education were established in some countries in Asia in the latter half of the nineteenth century, in others in the first half of the twentieth century. In countries which were under colonial domination, the model was derived from the metropolitan country;

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1. "Region" refers to the area of service of the Unesco Regional Office for Education in Asia, namely, Afghanistan, Burma, People's Republic of China, India, Indonesia, Iran, Japan, Khmer Republic, Republic of Korea, Laos, Malaysia, Mongolia, Nepal, Pakistan, Philippines, Singapore, Republic of Sri Lanka, Thailand, Republic of Viet-Nam.

others chose one or the other of the European models. The indigenous traditions and institutions of higher learning went into decline, or survived, on revivalist zeal, in forms which borrowed more from the new institutions than from the traditional pattern. In all countries, though new institutions of higher education marked an almost complete break with the earlier traditions, they caught hold deeply in the societies as very few other forms of transferred institutions have done. Indeed, in the first decades of the twentieth century, the aspiration to have one's own university became an important expression of nascent nationalism (for example in Burma, Sri Lanka). In Indonesia, the development of local universities became a part of the history of freedom movement.

The new higher education systems were par excellence university systems centred on the establishment and development of universities. Universities, perhaps more than most other social organizations, have a tendency to persist in their forms and keep longer the traces of their origin. In the Asian countries also the growth of higher education was dominated by the development of individual universities and the original models on which they were formed.

The first universities were established at different points of time in different countries, for example the Philippines, the University of Santo Tomas (1645), India (1857), Japan (1877), Thailand (1917), Burma (1920), Iran (1934), Sri Lanka (1942), Afghanistan (1947), Indonesia (1949), Malaysia (1956). The course of development from the establishment of individual universities to the development of a university system, which in turn leads to the development of higher education system, is a relatively long process. In countries where the university system was established by importation, its adaptation to indigenous conditions and subsequent autonomous growth makes the process even longer. The countries in the Asian region will be found to have reached different stages along this process.

In countries which were formerly colonial territories, the first universities were established on the metropolitan models and used the language of metropolitan authority as medium of instruction. To make the degrees acceptable and to set standards, the examination system of these universities in most countries was linked to the examinations administered by the metropolitan university. While the system undoubtedly helped the universities to establish themselves as elitist institutions, it had an incalculable effect on their subsequent development, notably in the context of the changed political, social and economic conditions which emerged when the countries regained their independence. It also had profound social and educational consequences. Abstract knowledge and theory became the hallmark of university education: it could not be otherwise because an examination externally controlled and remotely administered can only assess theoretical knowledge. Even more far

reaching were the consequences of the medium of instruction. Indigenous languages fell into disuse in the discourse of learning and those who received education in the universities became a class apart. Enrichment and transmission of culture which are associated with the functions of a university could not be activated by a social organization which had alienated itself from the sources of culture. As a number of articles in this publication show, many countries in the region are confronted with this problem as they seek in their plans to bring the universities closer to national development needs. The process of adaptation has taken longer and called for more fundamental reorientations, the search for which is a striking feature of the current scene.

Countries which were free also organized their first universities on one or the other of the European models - for example Japan, Iran, Thailand. In all cases the national language was adopted as the medium of university education, and scholars were specially encouraged to acquire proficiency in foreign languages so that scholarship in these languages may become accessible to the national language through translation and other means.

In most countries in Asia the first universities grew out of an existing professional school - generally a medical school. (At Salerno, one of the earliest European universities - twelfth century - one of the largest schools was that of medicine). In the subsequent development of the universities, however, professional education tended to be overshadowed by academic and literary education. An important exception was Japan. In 1877 when the University of Tokyo was established, there were already a number of vocational and professional colleges and the University of Tokyo gave special attention to developing strong technological and scientific faculties. These continued to be the focal points of the University's development in subsequent decades.

Another factor which has had an important influence on the course of higher education in the Asian countries is the role assigned to private organizations in institution building. In India and the Philippines the private sector has played a major role in establishing colleges and even universities, and to it can be attributed the rapid expansion of higher education which has occurred in these countries. In some countries such as Japan and the Republic of Korea, public and private sectors have been held in some kind of balance. In other countries, higher education has rested on the initiative and support of the State.

From these beginnings, the higher education system has developed rapidly in the Asian countries. All countries but one have their own universities which take a commanding position in the whole education system. With the quickening pace of national efforts for development, there are new pressures for change in higher education generally and in the university system in particular.

Unesco Regional Office, Asia, Bulletin Vol. VII, pp. 1

Rapid expansion of higher education is a striking feature of recent developments - and the pressure continues to mount. The magnitude of increase, of course, varies from country to country and there are also wide differences in the stages of development. By far the largest number of students in higher education per 100,000 population is to be found in the Philippines (1,751 students), higher even than Japan (1,656 students). Indeed, the Philippines is only next to U.S.A. and U.S.S.R. in the number of students in higher education in relation to population. Of the countries in the region for which data are available, four (apart from Japan and the Philippines) have students per 100,000 population ranging from 560 to 700 /India (561), Singapore (654), Republic of Korea (653) and Mongolia (699)/. In the five-year period 1965-70, Mongolia registered a decline in student numbers in relation to population, Singapore remained stable and India and the Republic of Korea showed an annual growth rate of 12.5% and 7.2% respectively. In three countries (Iran, Pakistan and Republic of Viet-Nam) the student number per population ranged from 270 to 350, and the annual growth rate over a five-year period continued to be high: 9.7% in Pakistan, 12.1% in Iran and 15% in the Republic of Viet-Nam. By far the largest number of countries in the region have student numbers per population in the range of 100-200. The average annual growth rate in this group varies from 3.6% in Malaysia to 12.5% in Burma and 20.4% in Nepal. Sri Lanka and Indonesia, after a high growth rate in the earlier decade, registered a lower rate of increase in recent years - in Indonesia the student number per population rose from 179 in 1964 to 187 in 1970 while Sri Lanka showed a decline from 127 in 1965 to 117 in 1970. The smallest student numbers per population are in Afghanistan and Laos. In Afghanistan a high average annual growth rate of 16% was achieved in the period 1965-70 and the student number per population increased from 23 to 43. Laos has yet to establish a university and at present depends mainly on training abroad for its requirements of higher education.

The expansion of higher education reflects many of the factors which are active also in expanding the school systems - the demographic increase, newly awakened educational and social aspirations, the ethos of equal opportunities. When the first universities were established, the school system was generally underdeveloped. Indeed, in the developing countries of the region, the newly established universities were given greater attention in terms of allocation of resources than the primary and secondary levels of education. The latter came to be looked upon more as selection devices for admission to the universities than as means of education of children. In the decades since World War II, the situation has changed dramatically. Both primary and secondary forms of education expanded rapidly - the former at an average annual growth rate of around 6% during the period 1950-1970, and the latter at around 9%. The enlarged school system generated increased demand for higher

education. By and large the education systems in the developing countries in Asia have been "one-track" systems, channeling the students from one level to the next higher level. They do not provide adequately diversified opportunities for education and training, and consequently the pressure for places in the universities increases even to the extent of a serious imbalance between the number of those who graduate and the volume of gainful employment in the national economy.

The expansion of school systems and the relatively broader access to higher education is bringing population groups into the educational stream who formerly had few educational opportunities. This adds to the number of those who aspire to higher education and is also changing, gradually but significantly, the composition of the student population in terms of social class and geographical distribution. In all countries of the region, a high growth rate of higher education is associated with the increasing scale of educational facilities in rural areas. Another important population group who is beginning to participate in higher education is women. It reflects the increasing participation of women in professional careers. The Philippines has the unique distinction of having more women in higher education than men. In a number of countries women's enrolment has been increasing at a faster rate than that of men, and women form a significant percentage of the total enrolment - Burma (37 %), Malaysia (33 %), Singapore (30 %), Sri Lanka (42 %), Thailand (42 %).

In countries in which the private sector has considerable freedom to establish and run higher education institutions, it has strengthened expansionary trends. The demand for higher education has created the supply of places. This has not been achieved without consequential problems. Fields of study which call for heavy investment of resources, such as science, technology, medicine, or agriculture have been generally neglected in favour of fields of study which do not require heavy investment (literature, humanities,etc.), even though the national interest may lie in priority being given to science and science-based studies.

A new influence in the development of higher education in recent years has flowed from the adoption by the Governments of planning as a means of economic and social development, and of educational planning for a balanced growth of the education systems within the framework of overall national plans. All countries of the region periodically evolve their mid-term plans - five or four-year plans - of which educational plans form a part. While the purposes and methods of the five-year plans differ from country to country, they have served to focus attention afresh on the role and functions of the institutions of higher education. Examination of the problems of manpower, employment/unemployment, research and development have underlined the need, on the one hand, to

relate higher education more closely to the objectives of national development, and, on the other hand, to view the education system as an integral unit. Since the time-scale for the planning of an education system or influencing the directions of its growth is longer than that of a mid-term plan, recognition of the need for developing perspective plans is gaining ground, in which both reform and growth can be encompassed. It cannot be claimed with any measure of confidence that educational planning as it is practised in the countries has developed the techniques which can deal with the problems and subtleties which are unique to the nature and functions of higher education - questions of the autonomy of learning, of creative scholarship, of freedom of choice. Nonetheless, the practice of educational planning has served, more by its side effects than directly, to induce the development of a higher education system out of discrete individual institutions. At the institutional level also educational planning has had a positive influence and is leading universities to set up their own centres for planning their institutional growth.

Another important aspect of recent developments is the shift that is discernible in the balance between science/technology on the one hand, and humanities and social sciences on the other hand. The shift in favour of science/technology has been induced by Government policies and is attributable to the influence of national development planning. Of the countries for which data are available, five have more than 40% of the total enrolment in science and science-based fields of study; in six countries, the percentage ranges from 25 to 35, and only five countries have less than 25% of the enrolment in scientific studies. A parallel development is the establishment of separate universities, or institutions of university status, in special fields of study. Burma provides an illustration of this trend in its full range but it is a strongly emerging trend in many countries of the region leading to establishment of universities or university institutions for technology, agriculture,etc.

Cultivation of knowledge and its advancement has been one of traditional functions of a university. Research and teaching go hand in hand. The research capacity of a university is however a function of its internal growth: the university system in a country has to consume what it produces. In recent years, as the articles in this publication will show, a number of countries are devoting special attention to developing post-graduate levels of higher education which provide the research workers and also teachers for the university system. The forms of organization differ, but the underlying impulse is the same in Centres of Advanced Study (India) or the development of Graduate Schools. In the developing countries of the region, post-graduate education is viewed by some as the weakest link in the university system:

the trends seem to suggest that in the next few years this level of higher education may emerge as a focal point of developmental effort. [2]

Should research be a prior prerogative of universities in the allocation of scarce resources? In a growing number of countries in the region, the issue is coming to the fore as the Governments, prompted by developmental needs, establish research institutions outside the university system. In countries where the network of Government-supported research institutions has grown to a substantial scale, the problem of establishing linkages with the universities is gaining urgency.

Expansion of enrolments has taken place by and large within the existing patterns and structures. Higher education has so far been associated mainly with education in the universities. The emergence of new economic and social demands and the changing composition of the student population indicate the need for more diversified structures. The search for new institutional forms is reflected in the emerging trends in a number of countries in the region. (Hiroshi Kida in his article on higher education in Japan refers to the experiment of Tsukuba University. The use of radio and correspondence instruction are being tried out in India, Japan, Republic of Korea, Thailand). Greater attention is now being given to the development of post-secondary institutions outside the university system - polytechnics, technical institutions, junior colleges,etc. In a highly developed country such as Japan, this sector of higher education is a fast-growing sector. In the developing countries the need is no less urgent even though the

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2. Professor Blackett in his convocation address to the University of Leeds (England) made the following point:

> "There are three reasons why it seems to be exceedingly important that all developing countries should attempt as soon as possible to create facilities in the major subjects for first class higher degree work, so that normally a student takes his higher degree in his own country. First, the present widespread practice of sending most bright students overseas to take a higher degree makes it difficult to build up native research schools in the universities because an adequate supply of research students is the life-blood of a creative university post-graduate department. Following this it will be difficult to keep good staff unless they have an adequate number of post-graduate students. Second, the loss of trained people to the developing countries, by overseas students not returning to their homeland after taking their higher degrees abroad, will be reduced. Third, it will save much foreign exchange".
> /Quoted in the Report of the Education Commission. *Education and National Development*, Ministry of Education. Government of India (1966)/

problems of evolving new types of institutions are compounded by paucity of resources and lack of suitable personnel (Jongchol Kim in his article on higher education in the Republic of Korea refers to some of these difficulties).

One phase in the development of higher education in the countries of the region seems to be drawing to a close and giving way to a new phase in which the keynote is the relevance of higher education to the national context, for the universities to grow out of their character of "alien implantation" and be in tune with the "labours and honours" of the societies which they serve. This calls for redefining the functions and role of higher education. As Jongchol Kim in his contribution points out: "Lack of clear-cut objectives and consequently inadequacy of the programmes are the major weaknesses. Many institutions of higher education have been established, many departments have been organized, and many courses have been multiplied without clear-cut objectives in terms of the needs of the society". What forms the re-orientation of higher education may take may not yet be clear, but the debate on the basic issue has certainly started.

It is symptomatic of the emerging trend that seven countries in the Southeast Asian region have got together, the Governments and the universities, to establish a Regional Institute of Higher Education and Development which is to make continuing studies of how institutions of higher education can make a contribution to national development.

Another expression of the same trend is seen in the efforts of some of the countries to locate their higher institutions so that they not only have a more rational geographical distribution within the country but the institutions would become focal points of educational development in their areas.

The concern for the relevance and quality of higher education is prompting examination, in a new context, of issues such as the relationship of the State and universities, the governance of institutions of higher education, the problems of management, articulation of the university system with other sectors of higher education and the accountability of higher education institutions. The articles in the present publication are offered in the hope that they will help to show the variety of experience which a common search has evoked.

SELECTED STATISTICS OF HIGHER EDUCATION IN THE ASIAN REGION

/Only countries in the region for which data from official publications are available are included in the following tables/

Table 1. Education at the third level: total enrolment, percentage female, students per 100,000 population, annual rate of increase

Country	Academic year beginning in	Total enrolment	Percentage female	Students per 100,000 population	Annual rate of increase (%)
Afghanistan	1965	3 449	20	23	16.2
	1970	7 302	15	43	
Burma	1965	26 023	[1]35	105	12.5
	1971	52 809	[2]37	186	
Ceylon	1965	14 139	32	127	0.5
	1969	14 400	[3]42	117	
India	1965	[4]1 728 773	[5]19	355	12.5
	1970	[4]3 112 404	22	561	
Indonesia	1964	184 000	...	179	3.7
	1969	221 124	[6]28	187	
Iran	1965	28 982	24	118	12.1
	1971	86 572	25	296	
Japan	1965	1107 327	24	1130	9.6
	1970	1 714 054	27	1 656	
Khmer Republic	1965	7 362	12	120	14.7
	1968	11 094	15	165	
Korea, Rep. of	1965	141 636	25	499	7.2
	1971	214 653	25	653	
Laos	1965	145	12	6	31.3
	1970	566	14	19	
Malaysia					
Sabah	-	-	-	-	-
Sarawak	1965	146	39	17	25.9
	1969	367	40	38	
West Malaysia	1965	13 321	33	166	3.6
	1969	15 338	30	168	
Mongolia	1965	10 677	...	967	(-4.9)
	1969	8 733	...	699	
Nepal	1965	8 100	18	80	20.4
	1969	17 025	18	154	
Pakistan	1965	308 572	15	265	9.7
	1968	407 723	16	350	
Philippines	1965	527 968	[7]52	1 632	5.9
	1968	627 104	55	1 751	
Singapore	[4]1965	12 197	20	654	2.4
	1970	13 771	30	654	
Thailand	1965	53 370	[1]30	174	5.8
	1970	70 997	[2]42	196	
Viet-Nam, Rep. of	1965	27 105	[7]23	168	14.9
	1969	47 296	29	269	

Source. Official publications.

1. 1964
2. 1969
3. Universities only
4. Excluding teacher training
5. 1963
6. 1968
7. Private education only

Table 2. Education at the third level: Percentage distribution of enrolment by broad fields of study

Country	Academic year beginning in	Sex	Total	Humanities, Education, Fine arts	Law, Social sciences	Natural sciences	Engineering, Medical sciences, Agriculture	Not specified
Afghanistan	1965	MF	100	29.1	28.1	12.1	30.4	0.3
		F	100	55.4	16.9	13.6	14.1	-
	1970	MF	100	32.8	18.5	9.9	38.8	-
		F	100	47.6	12.0	10.1	30.3	-
Burma	1963	MF	100	48.1	6.1	32.5	13.3	-
		F	100	65.4	5.0	22.1	7.5	-
	1965	MF	100	44.0	11.0	22.5	22.5	-
		F	100	50.2	14.8	19.3	15.7	-
Ceylon	1965	MF	100	55.4	9.2	9.4	16.3	9.7
		F	100	79.5	1.1	6.9	10.5	2.0
	1969	MF	100	32.2	16.6	6.8	18.1	26.3
		F	100	34.4	22.4	5.4	10.7	27.1
India[1]	1960	MF	100	[2,3] 72.4	11.1	[2] ...	16.1	[3] 0.4
		F	100	[2,3] 90.4	1.2	[2] ...	8.0	[3] 0.4
	1965	MF	100	[2,3] 70.7	11.4	[2] ...	17.3	[3] 0.6
		F	100	[2,3] 90.8	1.2	[2] ...	7.1	[3] 0.9
Indonesia	1956	MF	100	7.4	49.9	6.0	36.7	-
		F	100	13.3	43.7	12.2	30.8	-
	1967	MF	100	26.6	40.6	3.6	22.8	6.4
		F	100	40.9	37.8	4.6	14.7	2.0
Iran	1968	MF	100	29.4	24.4	11.5	34.7	-
		F	100	45.2	20.2	10.7	23.9	-
	1971	MF	100	24.1	27.6	13.6	34.7	-
		F	100	39.7	25.3	12.3	22.7	-
Japan	1965	MF	100	23.8	44.4	3.6	26.7	1.5
		F	100	55.8	33.9	1.6	6.6	2.1
	1970	MF	100	24.4	42.0	2.8	26.8	4.0
		F	100	55.6	32.1	1.3	6.8	4.2
Khmer Republic	1965	MF	100	52.7	11.2	2.8	10.8	22.5
		F	100	81.2	3.4	2.0	6.9	6.5
	1967	MF	100	28.1	10.2	...	34.3	27.4
		F	100	33.8	31.2	...	16.6	18.4
Korea, Rep. of	1965	MF	100	29.4	24.0	8.8	37.8	-
		F	100	55.1	9.0	17.9	18.0	-
	1971	MF	100	27.6	17.8	7.1	46.3	1.2
		F	100	53.3	7.3	13.5	23.1	2.8
Laos	1968	MF	100	30.6	39.3	-	30.1	-
		F	100	9.0	19.2	-	71.8	-
	1970	MF	100	35.2	28.6	-	36.2	-
		F	100	28.1	14.6	-	57.3	-
Malaysia								
Sabah	-	-	-	-	-	-	-	-
Sarawak	1968	MF	100	-	100	-	-	-
		F	100	-	100	-	-	-

Table 2. Education at the third level: Percentage distribution of enrolment by broad fields of study (cont'd)

Country	Academic year beginning in	Sex	Total	Humanities, Education, Fine arts	Law, Social sciences	Natural sciences	Engineering, Medical sciences, Agriculture	Not specified
Malaysia (cont'd)								
West Malaysia	1966	MF	100	82.9	0.9	4.5	11.7	-
		F	100	94.8	0.5	2.7	2.0	-
	1969	MF	100	53.3	17.8	8.3	20.6	-
		F	100	68.9	19.2	5.5	6.4	-
Nepal	1965	MF	100	43.8	25.1	23.9	-	7.2
		F	100	70.4	8.8	19.1	-	1.7
	1969	MF	100	61.8	23.3	14.9	-	-
		F	100	81.0	7.9	11.1	-	-
Pakistan[4]	1965	MF	100	53.7	14.4	25.4	6.5	-
			100	69.8	6.2	20.5	3.5	-
	1967	MF	100	[5] 62.9	[5] 3.9	26.8	6.4	-
		F	100	[5] 71.3	[5] 3.6	21.4	3.7	-
Philippines	1965	MF	100	41.1	33.4	0.8	23.5	0.6
		F	100	57.3	26.8	0.9	14.3	0.7
	1968	MF	100	45.7	32.5	3.9	17.6	0.3
		F	100	57.4	28.3	4.2	9.9	0.2
Singapore	1964	MF	100	52.9	15.1	11.0	20.7	0.3
		F	100	78.1	10.0	7.2	4.7	-
	1970	MF	100	36.4	12.1	11.5	39.1	0.9
		F	100	58.6	17.0	13.4	11.0	-
Thailand	1965	MF	100	20.8	55.3	4.2	19.7	-
		F	100	34.6	43.1	4.3	18.0	-
	1970	MF	100	32.0	33.4	5.2	26.4	3.0
		F	100	42.8	34.0	5.4	17.8	-
Viet-Nam, Rep. of	1965	MF	100	35.6	26.5	19.9	18.0	-
		F	100	43.7	19.6	13.1	23.6	-
		MF	100	38.1	34.9	16.4	10.6	-
		F	100	49.8	24.0	14.0	12.2	-

Sources: Unesco *Statistical Yearbook*, 1970 (Paris 1971) and official publications.

1. Not including intermediate and pre-university courses.
2. Natural sciences are included with humanities.
3. Fine arts are included with "Not specified".
4. Including arts and sciences colleges at the intermediate level.
5. Social sciences refer to commerce and home economics only, other social sciences are included with humanities.

Table 3. Education at the third level: foreign students enrolled and national students enrolled abroad

Country	Number of foreign students enrolled in the country					Number of nationals studying abroad [1]				
	1962	1965	1966	1967	1968	1962	1965	1966	1967	1968
Afghanistan	21	6	6	40	40	233	524	648	672	710
Burma	29	17	20	20	25	442	359	359	380	378
Ceylon	8	16	33	40	45	964	703	766	859	862
India	3 923	5 660	5 856	6 100	6 300	10 233	11 192	12 039	12 712	13 646
Indonesia	-	-	-	-	-	2 441	2 592	2 587	2 937	3 092
Iran	85	92	186	200	141	8 920	10-498	11 268	11 526	11 740
Japan	4 896	8 266	10 044	8 728	10 031	3 553	4 084	4 625	5 107	5 364
Khmer Republic	-	-	-	-	-	356	384	351	296	251
Korea, Rep. of	62	140	173	189	210	5 304	7 014	7 879	8 025	9 283
Laos	-	-	-	-	-	188	330	389	429	468
Malaysia	15	19	22	91	109	5 524	7 595	7 687	7 464	7 582
Mongolia [2]	-	-	-	-	-	2 360	2 348	1 954	1 787	1 652
Nepal	-	-	-	-	-	753	1 162	906	931	938
Pakistan	469	569	537	550	736	2 181	3 156	3 184	3 354	3 470
Philippines	5 395	8 677	9 200	9 800	11 300	2 312	2 796	3 169	3 080	3 026
Singapore	1 322	2 348	2 210	1 892	1 779	1 236	1 457	1 616	1 724	1 697
Thailand	25	50	67	111	140	2 193	4 130	4 835	5 463	6 453
Viet-Nam, Rep. of	120	34	61	47	33	2 411	3 414	3 428	3 483	3 758

Source: Unesco. *Statistics of students abroad 1962-1968.* Paris, 1972. (Unesco. Statistical reports and studies. ST/S/18).

Note. According to the Unesco definition "a foreign student is a person enrolled at an institution of higher education in a country or territory of which he is not a permanent resident".

1. These data represent an aggregate for all countries or territories (numbering 110) which have institutions of higher education and supplied the relevant information. The following 19 countries or territories with institutions of higher education are not taken into account as the relevant data were not available:

   Africa : Cameroon; Congo, Dem. Rep.; Libya; Mali; Morocco; South Africa; Southern Rhodesia.

   America North : Jamaica.

   America South : Brazil; Peru; Venezuela.

   Asia : China, People's Rep.; Korea, Dem. People's Rep.; Viet-Nam, Dem. Rep.

   Europe : Albania; Bulgaria; German Dem. Rep.

   Oceania : Fiji Islands.

   USSR (except for Mongolia).

2. The figures on "Number of nationals studying abroad" include Mongolian students enrolled in the USSR.

HIGHER EDUCATION
IN ASIAN COUNTRIES

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THE DEVELOPMENT OF HIGHER EDUCATION IN AFGHANISTAN: KABUL UNIVERSITY

by G.H. Mujaddidi

Historical background

The founding of Kabul University dates from 1932, when the Faculty of Medicine was established by a Royal Decree of the late King of Afghanistan, His Majesty Mohammad Nadir Shan Ghazi. Other faculties were founded: Law in 1938, Science in 1942 and Letters in 1944 and, in 1947, the University was organized into a separate institution operating within the framework of the Ministry of Education.

After its incorporation, Kabul University continued to grow with the addition of a Faculty of Theology in 1951 and the Faculties of Engineering and Agriculture in 1956. A Faculty of Economics was started in 1957, and the Faculty of Pharmacy was formed in 1959. The Faculty of Veterinary Medicine was instituted in 1961, the same year in which the Institute of Education, formerly directly under the Ministry of Education, was attached to Kabul University. Finally, a Faculty of Education and Home Economics was established in 1962.

The University now offers Bachelor of Arts, Bachelor of Science, and Doctor of Medicine Degrees. In addition to degree programmes, the University also offers certificates for shorter periods of study such as summer workshops and adult education programmes.

Women were first included in the student body in 1960, the same year that the cornerstones of the buildings were laid at the present campus. All the new campus facilities opened in early 1964.

Thirty years is not long in the history of the world's institutions of higher education; since its founding, however, Kabul University has progressed rapidly. Approximately 1,000 students were enrolled in 1956; the number had increased to nearly 4,000 in 1967. Over 3,600 educated young men and women have been returned to Afghan society by the University.

Concentrated efforts to develop and expand Kabul University began in 1956, when the Royal Government of Afghanistan adopted its First Five-Year Plan. This plan envisioned the training of various personnel for the University, the building of new facilities, and increase in enrolment - which was to become co-educational. These aims in great measure have been accomplished as the University continues to develop.

The medium of instruction at Kabul University is Farsi, although, because of affiliations with various assistance programme agencies, certain faculties use other languages of instruction as well. The Faculty of Agriculture and the Faculty of Engineering offer courses taught in English. Because of affiliations, languages as indicated below can be helpful for study in the following faculties:

Medicine	- French	Economics	- German
Law	- French	Education	- English
Science	- German	Polytechnic	- Russian

University calendar and facilities

Kabul University's school year normally begins during the first week of April and ends early in January, with a one-month vacation period starting early in August. The official calendar of Afghanistan is based on the solar year, although there are many holidays determined from the lunar Moslem calendar, this making it difficult to determine exact dates well in advance. Students normally plan to arrive in Kabul not later than 20 March for a given school year.

In 1964, Kabul University moved to its new campus with the completion of new buildings housing the Faculties of Engineering, Agriculture, Education, Islamic Law, Law, and Economics. In addition to these academic facilities, a central administration building, a new university library, a dormitory, and a gymnasium were completed. Since moving to the present campus, construction of an additional classroom building, an engineering annex, a student centre, a cafeteria, a gymnasium annex, additional dormitory facilities, and a mosque has been completed or planned.

Central library

Kabul University's first library was founded in 1932, at the same time as the Faculty of Medicine. As the faculties increased in number, each formed its own library. As the University grew, the need for a central library was recognized, and a new library was included in the new campus and opened in 1964. All the books in the faculty libraries were centralized and made available for general use.

The building is situated in the centre of the campus and is furnished with modern equipment. The library utilizes the United States Library of Congress classification system. It has, at present, about 50,000 volumes in various subjects and languages, with sections for professional journals, reference materials, magazines, and daily news, as well as a reserve section and an audio-visual activities room. In the reference section there are about 2,000 significant works. Books required by the various faculties for classroom use are kept in the reserve section.

The audio-visual section is furnished with film projectors, strip and slide projectors, microfilm readers, and other equipment. The circulation section handles about 300 volumes a day.

Kabul University Library has made arrangements with other libraries and cultural institutes of the world for exchanging books and publications.

University Research Centre

The University Research Centre, which was reorganized in 1967, serves to encourage research in all University departments and to conduct and promote research needed by the University as a whole in order to enable it to meet more fully the demands made upon it. Specifically, the Centre aims to provide the following services:

1. Advisory assistance for University faculty members and students in the planning, conducting, and reporting of research;
2. Evaluation of all aspects of the research: design, progress, and final report;
3. Review of papers intended for publication;
4. Assistance in obtaining the necessary bibliography for research workers;
5. Publication of the major research journal of the University;
6. Evaluation of research proposals prior to their submission to the newly constituted Research Council, which in turn will authorize and distribute available funds for research projects;
7. Organization of seminars, courses, and other programmes in the general interest of research at the University;
8. Arrangements for foreign research scholars or teams with which the University can collaborate.

Admissions

Kabul University admits as students, first, individuals who have completed their secondary education in Afghan schools and who have qualified on the basis of the University Admission Examination. Prospective students, when applying to Kabul University, are given personal preference concerning a field of study, based on the availability of seats within a given faculty and the qualification of the student.

Under the Rules and Regulations of Admission for Kabul University, foreign candidates may be admitted, provided they meet academic, legal and language proficiency requirements. Applications are screened by a committee consisting of appropriate faculty representatives. Admission is subject to availability of space within a given faculty.

Foreign students are to be charged the following tuition fees per year: (a) Faculties of Letters, Law, Education, Islamic Law, Economics - 7,500 Afs.*; (b) Faculties of Medicine, Science, Engineering, Agriculture and Polytechnic Institute - 15,000 Afs. Students studying languages of Afghanistan are not charged tuitions.

At present, Kabul University does not offer graduate programmes. It is possible for graduate students to be admitted as special students under the regulations established for undergraduates.

Grading and examinations

The general grading policy followed by the University is based upon percentage evaluations, with a passing grade of 50 and a required overall average of 55. Students who fail a course due to extenuating circumstances may be given the opportunity to take the course examination for a second time. Students who fail two subjects or whose overall average is less than 55 % are required to repeat the entire year or semester of work. Repeating students who fail a second time are dropped from the University.

The procedures followed in examining students vary considerably among the faculties and within a given faculty. At the discretion of the instructor, quizzes and examinations, both oral and written, are given to assess the student's progress in his course of study. In general, students can expect a final examination in most courses. In the event that a student is given an opportunity to take a second-chance examination due to an unacceptable mark in the course, the examination is given within a 15-day period prior to the beginning of the next semester.

Kabul University offers scholarships for outstanding Afghan students in various foreign countries as well as to students from other countries interested in pursuing studies at Kabul University. Inquiries concerning the availability of scholarships and their values should be directed to the Director General of Education, Kabul University.

Student life

The Office of the Vice-President for Student Affairs co-ordinated the entire student services programme. This office, along with the various divisions within Student Affairs, is ready to assist students with problems or difficulties they may encounter while attending the University.

The Kabul University Counselling Office was established in 1967 to provide personal, vocational, and educational counselling to individual students upon their request or upon referral by the university staff. The University has also established a Student Activities Office

* 75 Afghanis equal approximately US $1.00.

to advise and assist students in conducting out-of-class activities. All entering students are offered an opportunity to participate in a three-day orientation programme to acquaint them with the physical facilities, academic programmes, and the aims and ideals of Kabul University.

At the present time, campus accommodations are limited to one modern well-equipped dormitory accommodating 1,460 male students. The University provides sports and recreational programmes, which include an intra-mural and varsity sports programme designed to meet the needs of all students. Kabul University annually has a number of foreign students in residence. Students from some ten foreign countries are usually found studying each year.

Faculties and departments

The Faculty of Agriculture, at present, has three main departments: Plant Science, Animal Science, and Agricultural Extension and Economics.

The Faculty of Economics presently has a common programme for all students. The main subjects are National Economics and Business Administration.

Within the Faculty of Education, students can study in the areas of Educational Administration, English, Home Economics, Mathematics, Psychology, Science, Social Foundations of Economics, and Social Sciences.

The Faculty of Engineering consists of the Departments of General Science, Civil Engineering, Mechanical Engineering, Electrical Engineering, and Architecture. A Department of Chemical Engineering is to open in the near future. The Department of Agricultural Engineering comprises 75% of the courses in engineering and 25% in agriculture.

The existing laboratories of the Engineering Faculty, representing a total investment of about $1,000,000, provide facilities for: Civil: soils, bituminous, structures, concrete, surveying, sanitary; Electrical: Electronics, electrical measurement, electrical machines and power, control and computation, standards and calibration; Mechanical: fluid mechanics (hydraulics), heat transfer, power, I.C. engine, instruments; and Sciences: Physics, chemistry.

The Faculty now has a four-year curriculum operating on a semester basis; a five-year curriculum plan has been prepared to be initiated upon approval.

The Faculty of Law and Political Science is made up of the departments of: Public Laws, Special Laws, Political Economy, Islamic Laws, and Political Sciences.

The course of studies offered by the Faculty of Letters and Humanities is a broad programme in the humanities through its departments of: Arabic Language and Literature, Dari Language and Literature, General Language and Culture Studies (for foreign students), French Language and Literature, History, Geography, Journalism, Pushto Language and Literature. There are additionally Institutes of Fine Arts, Geography, Linguistics, and Social Studies (Anthropology).

The Faculty of Medicine comprises the departments of: Anatomy, Bacteriology, Bio-chemistry, Pathology, Physiology, Pharmacology, Legal Medicine, Preventive and Social Medicine, Medicine Surgery (including Anesthesiology), Dermatology, Otorhinolaryngology, Obstetrics and Gynaecology, Pediatrics, Neurology and Psychiatry, Radiology, and Ophthalmology. The final year in the Faculty of Medicine is a rotating internship. This training is required for graduation and must be completed in the Kabul University Health Institute Hospitals. The training includes two months in medicine and surgery each, and one month each in obstetrics and gynaecology, pediatrics, dermatology, neurology and psychiatry, ophthalmology, otorhinolaryngology, laboratory (pathology and bacteriology), and preventive medicine.

The School of Pharmacy was established in 1959 as part of Kabul University, and its administrative officers were connected with the Faculty of Medicine. The School of Pharmacy consists of a four-year course of study leading to the Degree of Bachelor of Science in Pharmacy.

The Nangarhar Faculty of Medicine was created to supplement the number of doctors being trained especially for the eastern part of the country. The twenty departments which make up the Nangarhar Faculty of Medicine include: Anatomy, Physiology, Biology, Biochemistry, Physics, Pathology, Histology, Bacteriology and Parasitology, Psychology, Social and Preventive Medicine, Pharmacology, General Medicine, Ophthalmology, Otorhinolaryngology, Gynaecology and Obstetrics, Pediatrics, Psychiatry, Radiology, Anesthesia, and Forensic Medicine.

The final internship year requires full-time work on major services, one-third of which is in rural service. Rotation of work includes laboratory and research.

As the next phase in the development of higher education in Afghanistan, it is proposed that the facilities at the Nangarhar Faculty of Medicine be expanded and eventually form a second Afghanistan University.

The Faculty of Science is made up of three major departments: Department of Physics and Mathematics, Department of Chemistry and Biology, and Department of Geology and Meteorology.

The Faculty of Theology comprises two departments: Islamic Studies for Women and Islamic Studies for Men.

The Polytechnic Institute to train engineers in construction, energy, geology, and mining and petroleum, has departments of Construction (industrial and city, dams and canals, and roads and highways); Geology and Mining (exploration of mineral deposits and exploitation of deposits of useful minerals); and Petroleum (exploitation of oil and gas fields, and oil refining and gas working technology).

The people of Afghanistan express great interest in and demand more and better education for their children. During the year 1969, 1970, and 1971, the number of high schools were increased and each year the number of high school graduates also increased. It seems impossible that Kabul University alone will be able to absorb all students seeking higher studies.

Higher education is free in Afghanistan; all education expenses are covered in the government budget. Paying all educational expenses for all high school graduates therefore creates serious economic problems for the Government. Consequently, a number of high school graduates are assigned after one year of professional training as middle school teachers. Others enrol in two-year professional programmes at the higher teacher training schools. There are five higher teacher training schools throughout Afghanistan.

Statistical data

Table 1. Number of students and teachers during the last five years (in Kabul University)

Years	1968	1969	1970	1971	1972
Number of students	4 131	4 978	5 124	6 213	7 183
Number of teachers	378	522	558	691	916

Table 2. Number of graduates by field of study

Faculties \ Year	1967	1968	1969	1970	1971
Medicine (Kabul)	47	60	43	43	101
Law and Political Sciences	104	115	72	93	68
Science	35	37	62	43	59
Letters and Humanities	63	86	108	142	150
Theology	23	20	30	45	76
Engineering	33	35	65	54	54
Agriculture	27	27	16	29	71
Education	25	43	101	120	116
Economics	56	57	57	39	60
Pharmacy	14	19	7	7	8
Medicine (Nangarhar)	0	0	20	23	29
Polytechnic	0	0	0	0	0

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HIGHER EDUCATION IN BURMA

by Nyi Nyi

Introduction

The progress of education in Burma during the colonial period was conditioned chiefly by two factors: the need for expansion of the administrative machinery because of the rapid economic development of the country, and the dawn and growth of nationalism in Burma. When the Education Department was first established in Burma in 1869, the professed objective was "the diffusion of enlightenment among the rural masses;" but in practice, the Department had been chiefly concerned with meeting the rapidly growing demand for English by grants to mission schools which could teach English.

The concept of education during the colonial period was influenced and in fact best expressed by the three principles enunciated in the Macaulay's Minute of 1835, although in the middle of the last century there were admittedly opinions of more liberal and radical views which however never gained official acceptance.

The three important principles formulated by Macaulay, the Law Member of the Government of India, in his Educational Minute were:

i) the introduction of English education in place of the existing oriental studies;

ii) the adoption of English as the medium of instruction; and

iii) the Filtration Theory and the education of the upper classes as expressed in the words: "to form a class who may be interpreters between us and the millions whom we govern, a class of persons, Indian in blood and colour, but English in taste, in opinions, in morals and in intellect."

Thus in accordance with these general principles, when university education was first imparted in Burma in 1878, and even when the University of Rangoon was founded in 1920 as a result of the demands voiced by groups of leaders of Burmese opinion and also partly because by that time the Calcutta University came to be regarded by the British Government as the hot-bed of sedition and anti-government agitation, English literature and philosophy reigned supreme in the curricula of the University.

Burmese studies did not find a place when the University was founded and the policy enunciated above had been quite successful as there were many who were proud of their ignorance of the common language of the country in which they had always lived and would always live, as showing that if they were not quite English, at least they were not Burmans; some even pretended to know less Burmese than they actually did, as this was assumed to enhance their prestige. The scars still remain in spite of the two decades taken to eradicate the inferiority complex instilled by years of colonial education.

Another distinctive feature of the colonial education system was the neglect and lack of encouragement given to professional and vocational education and studies of natural and applied sciences. As remarked by the Director of Public Instruction in 1927: "all anglo-vernacular education in Burma was vocational so far as it supplied clerical labour." Thus in 1930, ten years after the founding of the University, 9 doctors and four engineers graduated as against 87 graduates in arts. At the end of another decade, the number of arts graduates increased to 100, but the medical graduates still numbered only 12 and engineering graduates remained at four. The number of science graduates was even reduced in 1940 to 20 from 34 in 1930. It was perhaps not surprising that the number of professional students was small because, as noted in the contemporary educational reports, even engineering graduates could not get suitable employment since engineering firms dominated by British and Indian capital preferred to employ their own nationals.

Burma regained her independence in 1948 and educational expansion and explorations were made in the decade and a half following independence. Besides the University of Rangoon which was reopened in 1946, a new University of Mandalay was founded in 1958. The system, however, remains substantially unchanged and educational thinking was dominated by archaic and outmoded ideas which are no longer even practised in Britain. Although the Burmese language was used throughout secondary schools as the medium of instruction, English continued to reign supreme in the University.

New educational policy

At this juncture the change of government took place on 2 March 1962, when the Revolutionary Council and Government led by General Ne Win came into power. On 30 April 1962, the Revolutionary Council proclaimed its common programme entitled "The Burmese way to Socialism" wherein the policy on education was stated as follows:

> "17 (a) Education - The Revolutionary Council believes the existing educational system unequated with livelihood will have to be transformed. An educational system equated with livelihood and based on socialistic moral values will be brought about. Science will be given precedence in education.

> Our educational target is to bring basic education within the reach of all. As regards higher education only those who have promise and enough potentialities and industriousness to benefit from it will be specially encouraged."

In order to implement the above policy on education in the university sector, a national seminar on higher education was convened in April 1964 by the Government. The seminar was attended by all University Rectors, professors and senior lecturers; administrative officials; representatives of government departments and industries; prominent educationists and journalists, etc. Deliberations were made freely and openly in the five commissions formed to consider different aspects of university education, and recommendations were submitted later to the Government for consideration and adoption, if approved.

With minor modifications, the recommendations were incorporated in framing the new system of university education and a new University Education Law of 1964 was promulgated. The new universities and institutes came into existence on 1 October 1964.

New university system

Aims of university education. For the first time in the history of university education in Burma, the aims of university education were prescribed by law as follows:

1. To create an intellectually well-equipped body of intelligentsia who will participate fully in the building of a Burmese Socialist Society;
2. To create such a body of intelligentsia who are willing, ready and able to contribute to the achievement and advancement of socialist goals in economic, administrative and social spheres of activity;
3. To devise courses of instruction and training in which foremost priority is given to technology and science as to lead to effective vocational and professional pursuits;
4. To initiate and promote research projects which will contribute to the successful achievement of socialism;
5. To provide instruction and training which will mould character, personality and attitudes in harmonious accord with socialist thought and values;
6. To inculcate a sense of pride in the dignity of labour;
7. To promote measures for continual achievement in intellectual resources and technical skills of the working people who are engaged in building a Burmese Socialist Society.

Organization. In the new system the number of universities was raised from two to ten, with seven affiliated colleges. Besides the ten universities and seven colleges under the control of the Ministry of Education, a Defence Services Academy under the Ministry of Defence also came under the university system.

Under the direct supervision of the Department of Higher Education are the University Press, University Translation & Publications Bureau and Universities' Central Library (specializing in Burmese and South East Asian Studies).

Administration. All universities and colleges are State universities and colleges directly under the control of the Department of Higher Education of the Ministry of Education. They however form independent units, each with its own university rector or college principal.

Policies are framed by two bodies, viz. the Universities' Central Council and the Council of University Academic Bodies, both under the chairmanship of the Minister of Education with the Deputy Minister of Education as Vice-Chairman. The Universities' Central Council with about 37 members includes Deputy Ministers, Directors of departments concerned, University Rectors and College Principals, representatives from the Burma Socialist Programme Party, People's Workers' Council and People's Peasants' Council, prominent educationists and journalists. It is responsible for the framing of broad policy and co-ordination of the work of universities and colleges.

The Council of University Academic Bodies is more widely represented, with over 40 members comprising Directors of departments and corporations concerned, University Rectors and College Principals, representatives of the various University Academic Bodies, educationists and journalists. This Council is responsible for the framing of all academic regulations and co-ordination of all academic work.

Each university has an administrative body and an academic body, while colleges have only administrative bodies. Although all these institutions form independent units under the direct control of the Department of Higher Education, close co-ordination exists between them either through the two Councils or in meetings of heads of institutions. Statutes and regulations are uniform for all institutions offering the same courses.

Finance. All universities and colleges are State institutions financed totally by the State. The university expenditures since reorganization have gradually increased, from Kyats 29,748,430 in 1964-65 to Kyats 67,042,160 in 1971-72.

Although free tuition was introduced at the university level in 1951, it was revoked in 1959 because of the great expense involved. A nominal fee of Kyats 15 per month is charged for all undergraduate classes and Kyats 25 per month for post-graduate classes. Five per cent of the population is exempted from payment of tution fees.

Academic work

Student numbers. When the University of Rangoon was founded in 1920, the students numbered 829, increasing in its first two decades to 2,728 in 1941. The University was reopened in 1946 with a student population of 2,006, doubling its population every six years. In 1961-62, the student population stood at 16,514.

Since the reorganization in 1964, the student numbers have increased markedly, from 20,555 in 1964-65 to 52,809 in 1971-72. However, the student population is getting stabilized with the annual fresh intake now being planned at 10,000.

Staff. The staff-student ratios for the post-war years have been a constant bleak picture fluctuating between 1:15 to 1:20. In 1964 it was brought down to 1:9 with the reorganization, but slowly rising again to 1:13 in 1969-70. In 1971-72 however it has been brought back to 1:10.

The staff of the universities are recruited locally with a few exceptions (at any time numbering less than 20) of the international staff belonging to the United Nations Specialized Agencies, the Colombo Plan and other countries.

Senior members of the staff generally have studied abroad. Although previously training abroad was concentrated in the United Kingdom and the United States, it is now diversified to include other countries so that international experience and literature may become accessible to our research scholars.

Courses

i) Admission requirements: In order to enrol in one of the university-level institutions, the student has to pass the Basic Education High School Examination (i.e., the end of the eleven-year basic education course). He must be placed in the so-called "A" List (which denotes eligibility for university admission) and must have completed 16 years of age.

ii) Duration of studies: The duration of the first degree courses varies according to the field of study. Broadly speaking, the duration of the first degree courses are as follows:

Arts and natural sciences, economics	- 4 years
Education, agriculture	- 5 years
Engineering, architecture, forestry, veterinary sciences, dentistry	- 6 years
Medicine	- $6\frac{1}{2}$ years

Master's and doctorate degrees are also offered in many subjects, generally lasting about three years for the former and another three or four years for the latter. Post-graduate degrees and diplomas are now offered in almost all the fields.

The courses in professional universities and colleges are designed to meet the needs of the students studying for a particular profession. Thus chemistry in medical institutes stresses on organic and analytical chemistry and biochemistry, while chemistry in engineering institutes lays stress on physical, inorganic and analytical chemistry.

Another notable feature is the specialization of different institutions for advanced studies. In order to avoid duplication and wastage, some special field of studies especially with expensive equipment are located only in one institution. Thus advanced nuclear chemistry and nuclear physics courses are only available in the Rangoon Arts and Science University while Moulmein College, being on the sea coast, has the Centre for Marine Biology, and Mandalay, the cultural capital of Burma, is developing its oriental studies.

Enrolment trends. Before the adoption of the new system, the ratio for arts is generally about 60 % while science, technology and other professional studies constitute about 40 %. This ratio has now been reversed and enrolment ratios now stand at about 75-80 % for science, technology and professional studies and 20-25 % for arts and humanities.

Research. Research is encouraged and university staff members constitute the majority both in attendance and in presentation of papers in the annual research congresses. From 1966 to 1971, altogether 1,706 papers were presented by various members of the university staff in the research congresses.

In order to avoid overlapping and duplication and thus wasting the scarce resources, research work and fields are allocated to different institutions through co-ordination work made in the Research Divisions of the State Research Development and Co-ordinating Committee instituted by the Office of the Prime Minister.

About 70-80 % of the research projects are geared to the needs of the country with a direct impact on development. Research grants are given by the State to both staff and post-graduate students and close co-ordination exists between the university and the industry. The university professors are generally represented on the advisory boards of the industries and directors of industrial corporations usually sit on the academic bodies and various Boards of Studies. The universities also undertake research contracts for other ministries and commercial corporations.

Student welfare

Over 60 % of the students in Rangoon and about 85 % of the students in district colleges are housed in hostels. They are charged Kyats 50 per month and the State subsidizes Kyats 11 per month per student for their board and lodging arrangements. Although all universities and colleges are co-educational, the hostels are separate for boys and girls.

One hundred new scholarships are offered annually for the best students among the entrants. Other scholarships, e.g. scholarships for natural sciences, scholarships for winning the Education Minister's Prize for Outstanding Students three times successively, are also offered.

Stipends are given to about 20% of the student population on the sole criterion of needs of the student and his parents.

Five types of student organizations exist to cater for the needs of the students, viz. Hostel Welfare Associations, Sports Organizations, Cultural Groups, Academic Societies and Literary and Culture Society of the National Minorities. In all these student associations, staff members serve as presidents and treasurers while students are responsible for other functions.

One remarkable feature of the student life in Burma now is their participation in national development work. They generally participate in development projects as part of their studies. Almost a quarter of the student population (over 13,000 in 1971-72) served as volunteer teachers in the illiteracy campaign which is being systematically waged by the Government. The students spent their vacations happily amongst the villagers reaching the remote corners of the country, with all the travelling expenses paid by themselves. The students' role in eradicating illiteracy in Burma will forever serve as a shining monument to the noble cause of liberating the country from one of its evil legacies of the feudal and colonial past.

Non-university institutions

Three types of non-university schools are in existence at the tertiary level, viz. government technical institutes, State agricultural institutes and teacher training colleges. These institutions train middle-level technicians and middle school (i.e. lower secondary) teachers. The technical and agricultural institutes (although they are both called institutes in English) are the same as universities for want of a better term. (The terms in Burmese are different: Tekkatho for Universities, and Theikpan for these middle-level institutes). These institutes admit those who have passed the Basic Education High School Final Examination while the teacher training colleges only admit primary teachers with a minimum of three years' service.

The duration of the course is three years (for technical and agricultural education) and one year for teacher training. The annual fresh intake is about 600 for technical courses (in three institutes), 300 for agriculture courses (in two institutes), and 600 for teacher training (in three colleges). It is hoped to double the intake of the technical institutes by the end of the current Four-Year Plan (i.e., 1200 in six institutes by 1974-75).

New developments and trends

Many new developments have taken place in the Burmese university system since its reorganization in 1964. The most significant developments during the last eight years may be listed hereunder:

i) Modernization of curricula;

ii) Close relationship between theory and practice;

iii) Research and participation in national development;

iv) Adoption of Burmese as the medium of instruction;

v) Planned growth of university education.

Modernization of curricula. The university curricula are constantly reviewed by Boards of Studies representing university, industrial and other interests in order to modernize and to meet the changing needs of the country. The curricula are expected to reflect a sound basic understanding of the principles and the study of the problems peculiar to Burma. Applied sciences are encouraged while pure and abstract studies are not neglected.

All the courses now offered are specialized studies culminating in a degree majoring in a field of study, although a student will of necessity study the appropriate minor courses in support of his major subject. All the first degrees are of former Honours standard and pass degrees are no longer offered.

Close relationship between theory and practice. It is felt that close relationship between theory and practice is essential if university education is to be useful and not utopian. Students are given training programmes, part of which involves training in the factory or at the work site. For instance in his six-year course of study an engineering student will have to contribute some manual labour (for two months during the vacation) in his third year, spending the two successive vacations in the factories related to his study and culminating in a six-month training in his final year actually working in the factory. He will of course be given a course-work, and teaching-on-site will be done by the university lecturers and factory managers and engineers serving as part-time lecturers for the duration.

This scheme is still in its infancy and is now being implemented in all professional studies. It is hoped to introduce it in the near future to all university studies.

Research and participation in national development. Universities are now closely linked with life outside and are involved in all development work. University professors and senior lecturers serve on various Boards of the industries and undertake research projects closely related

to the economic and social development of the country. Thus the Professor of Geology serves as Vice-Chairman of the Advisory Council on Petroleum, Mining and Geology and his department undertook geological survey and mineral exploration work, while the Professor of Chemistry heads the committee for the selection of the fertilizer plan. The Department of Chemical Engineering is closely involved in the research work to enable the sugar factory to run all the year round, while botanists are in close collaboration with local indigenous medical specialists in identifying the medicinal plants.

Adoption of Burmese as the medium of instruction. All educationists will agree that the most effective way of teaching a subject is through the students' mother tongue. It has been proved conclusively in several countries that even the intricate subjects of modern science and technology can be taught effectively in a non-European language. Although admittedly there would be difficulties and obstacles during the transition period, it must nevertheless be admitted that in the long run, the effectiveness and advantages of the adoption of the mother tongue as the medium of instruction definitely outweighs the inconveniences of the present. Besides a discipline couched in foreign terminology and language could never hope to become an effective tool for the populace in her efforts to develop the country.

Although Burmese has been adopted as the medium of instruction in the schools since 1946 and declared the official language since independence, university teaching continued to be made in English, thus creating a great gulf between school teaching and university studies. This anachronism is now removed and Burmese is being used throughout except for some post-graduate studies.

However, in order not to lower the standard of teaching and research, follow-up measures like effective mastery of a foreign language so as to comprehend a technical paper written in his field of study, production of appropriate textbooks and other reading materials are being carried out. The standardization of technical terms and vocabularies is placed in the hands of a State Commission headed by a learned scholar. Technical journals in Burmese are also published and in fact have reached its seventh year of publication.

Planned education. In the past, the universities are conspicuous by their absence of plans. The students are given free choice to choose their fields of study irrespective of the availability of facilities and the needs of the country. Thus it was not uncommon to find a department with four times the number of students it could really manage, while some other departments might be underpatronized even though the country's needs for the specialists in that field are evident.

Under the new system, the university admission is now regulated by the needs of the country and the availability of staff and facilities.

If however any particular branch of study needs expansion or improvement, it will be duly planned and the construction of new laboratories, training of staff and procurement of materials made in accordance with the plans drawn so that unnecessary dislocations will be avoided as far as possible.

Problem

The paramount problem in the field of higher education is the employment prospects of the graduates. Although the problem is not yet acute as in some countries, it could grow if left unchecked. At the present moment all graduates of the professional institutes found employment not long after their graduation.

Arts and science graduates are however less fortunate and there are about 3,000 graduates (predominantly arts) still looking for employment.

There are of course two possible solutions to this problem. The first solution would entail restricting admission to the actual planned needs of the country. This would however mean restricting entry to many qualified entrants to the university and the majority of the likely sufferers will probably belong to the working class whose uplift the State has pledged itself to implement.

The alternative solution is to devise ways and means to absorb the surplus graduates in some useful occupation which could even help develop the country. They could help survey and exploit the natural resources of the country, form producers' co-operatives in agriculture and livestock sector, etc. The Government has chosen this latter alternative, and it is strongly convinced that the problem will be under control in due course.

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HIGHER EDUCATION IN CEYLON*

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Early advanced studies in Ceylon were essentially monastic in character. Higher education in the modern sense began with the establishment of a Medical College in 1870. A University College was set up in 1921 for courses in arts and science. The two institutions were incorporated in 1942 as the University of Ceylon. During the next 25 years three more universities were established. Their independent and uncoordinated development gave rise to numerous problems and early this year they were all amalgamated to form a single integrated University of Ceylon with five campuses. This now has about 12,000 students and about 1,000 teachers. Courses are provided in agriculture and veterinary sciences, arts (including Buddhist studies, humanities, social sciences, etc.), engineering, law, medicine and dentistry, and science.

Historical background

The earliest institutions providing facilities for higher studies in the island were essentially monastic in character and date back to the middle of the 3rd century B.C., the time Buddhism was introduced to Ceylon. They catered mainly for the study of the Buddhist doctrines, the Sinhala and the Pali languages, grammar, rhetoric and prosody. A few centuries later astrology and Ayurvedic medicine appear to have been introduced as subjects of study. Some of these institutions, especially those that were located in the ancient capital of Ceylon, Anuradhapura, were very large and attracted scholars from India and other neighbouring countries. Fa-Hien, the Chinese traveller, recorded that at the time of his visit to Ceylon early in the 5th century A.C., the Abhayagiri Vihara had 5,000 monks and the Mahavihara 3,000. These institutions flourished till about the 9th century but little is known about them for the next few hundred years. They were active once again from the 14th to the 15th century and then gradually declined with the invasion of the country by various European powers and the establishment of their rule over the island. About a hundred years ago there was a resurgence of Buddhist cultural and educational activities and with this the Venerable Hikkaduwe Sri Sumangala Nayaka Thero founded the Vidyodaya Pirivena at Maligakanda, Colombo, in 1873, and the Venerable Dhammaloka Nayaka Thero founded the Vidyalankara Pirivena at Peliyagoda, Kelaniya, in 1875,for the promotion of advanced studies in Buddhism and the oriental languages. They soon gained a reputation both here and abroad as centres of learning and for several decades served as a training ground for students of Asia and other parts of the world.

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* At the time this article was written, the country was still called Ceylon. It is now Sri Lanka.

University education in the now accepted sense of the word, however, began in Ceylon about the middle of the last century. In 1835 the Government of Ceylon established the Colombo Academy "to impart some kind of higher education" in the island. This institution, along with several other schools which were then run by various Christian missions, imparted a secondary education and in addition provided some limited facilities for post-matriculation classes. In 1859 the Academy was affiliated to the Calcutta University which had been established two years earlier, and in 1881 it was renamed the Royal College and became the leading institution in Ceylon to prepare students for the external examinations of the University of London.

In the meantime the attention of the Government was drawn to the ravages of various endemic diseases in the island and the depopulation of the northern plains. It was pointed out that a medical school should be set up to train personnel so that medical assistance could be made more generally available in the country. In response to this a Medical College was established in Colombo in 1870 for providing a "sound and practical education in medicine, surgery and midwifery, together with a practical knowledge of anatomy, physiology, materia medica, pharmaceutical chemistry, and the art of dispensing." The College rapidly expanded and in 1888 its License in Medicine and Surgery (L.M.S.) was recognized by the General Medical Council of Great Britain. Formal power to produce fully qualified medical practitioners was conferred on the College by the Government in 1905.

Facilities for higher studies in fields other than medicine, however, continued to remain inadequate and there was much agitation for the improvement of the higher educational facilities in the island. In view of these insistent demands, the Government appointed a committee to report on the subject in 1911, and on its recommendations it was decided that a University College should be set up in Colombo, but the outbreak of the World War in 1914 hindered further progress for several years.

The University College was opened in Colombo in 1921 as a Government institution affiliated to the University of London. It had 115 students and provided courses for the London intermediate and final examinations in arts and science, and the first year examinations in pure science for medical students. In its second year honours classes were begun in 4 subjects and by 1941 they were provided in 13 subjects. The total number of graduates from the College up to 1941 was 580.

The University College provided for a long felt need in the country and it gave able students who could not afford to go abroad an opportunity to receive higher education in Ceylon itself. However, as the courses were all geared to the requirements laid down by the University of London, it failed to live up to the expectations of the pioneers of the

university movement in Ceylon who had hoped that the new institution would provide for a fusion of what was best in the indigenous and the western cultures. The agitation for the setting up of an independent university therefore continued, but there was much controversy as to where it should be located. Some were in favour of Colombo; others wanted it sited near the old capital, Kandy. After prolonged discussions, which went on for nearly two decades, it was finally decided in 1938 that the new university should be at Peradeniya, near Kandy.

A site covering 363 acres was purchased, which was later increased to 1,700 acres by subsequent purchases and assignments of Crown land. Further progress and building activities were hindered by World War II. The war also created problems for the University College. Serious hardships were caused to the students by the long delays in the announcement of examination results; there were difficulties in ensuring the transport at the correct time from London to Ceylon of question papers and practical work material for examinations; and there was even a genuine fear that enemy action might prevent the safe arrival in London of answer scripts. These and various factors accelerated the setting up of an independent university, and in April 1942 the Government of Ceylon decided to establish the University of Ceylon and to locate it temporarily in Colombo.

The University of Ceylon was established in July 1942 by the incorporation of the Ceylon Medical College, founded in 1870, and the Ceylon University College, founded in 1921. Both institutions were, at that time, colleges of university rank. The new university had Sir Ivor Jennings as its first Vice-Chancellor. It was to have its main campus at Peradeniya, but till such time as the buildings and other facilities could be provided, the university was to be sited in Colombo in the premises of the Old Medical College and the Old University College.

The University, when it started in 1942, had four faculties - Arts, Oriental Studies, Science and Medicine - with seventeen independent departments. It had 904 students and 55 permanent teaching staff.

Soon after the war ended in 1946, building operations were started at the Peradeniya site. The Departments of Law and Agriculture were transferred to Peradeniya in 1949. A Faculty of Engineering was started in 1950. This was shifted to Peradeniya in 1964. Earlier, in 1952, the Faculties of Arts and Oriental Studies had been transferred to Peradeniya. The following year, in 1953, the Department of Agriculture and Veterinary Sciences was upgraded to a faculty.

In the late 1950s the numbers of students seeking admission to the University showed a very marked increase. This was chiefly due to the introduction by the State in 1945 of a free education scheme for every child from the primary school right up to the completion of his undergraduate studies. At about the same time the medium of instruction in the schools was changed to the national languages and the University was

called upon to make arrangements for providing instruction to undergraduates in the same media.

The increased demand for higher education soon made it clear that a single campus was inadequate. At Peradeniya a second teaching unit in science was set up in 1961 and this was followed in 1962 by one in medicine. At Colombo a branch of the Arts Faculty was established in 1963. In addition to these steps the university examinations were thrown open to external students in 1962.

By 1966 the campuses of the University of Ceylon at Colombo and at Peradeniya had over 10,000 students, about equally distributed between the two. The administration of the departments in Colombo from Peradeniya became both difficult and unsatisfactory. The Colombo campus was, therefore, separated as the University of Colombo on October 1967. At that time it had 4,960 students in five faculties - Humanities, Social Sciences, Law, Natural Sciences, and Medicine. It was renamed the University of Ceylon, Colombo, in 1968.

In the late 1950s two other universities were established in Ceylon. The Vidyodaya and the Vidyalankara Pirivenas established in 1873 and 1875 respectively and to which reference has already been made above became in time the premier seats of Buddhist and oriental learning in the island and produced a large number of eminent scholars in these particular fields. In recognition of these services and due to the need for expanding higher education facilities in the island, these two institutions were given university status towards the end of 1958.

The Vidyodaya University was formally inaugurated on 18 February 1959 with 466 students in four faculties (Buddhism, Languages, Arts, and Science). It functioned for three years at the Maligakanda premises and was subsequently shifted to a more spacious campus at Gangodawila in 1962.

The Vidyalankara University was established on 1 January 1959 in the Peliyagoda Pirivena premises with 543 students in five faculties (Buddhism, Languages, Arts, Science and Research, and Philosophy). Sections of this University were subsequently shifted to a new campus two miles away at Dalugama.

These two universities initially showed a very strong bias towards Buddhism and oriental studies. Later they added many new departments both in arts and science and expanded very rapidly; by 1966 Vidyodaya and Vidyalankara had a student enrolment of 2,624 and 2,029 respectively.

By 1970 Ceylon had four universities and a College of Technology of university level. The independent expansion of these institutions created numerous problems. An attempt was made to control and coordinate their activities by setting up a National Council of Higher Education. This, however, met with only a very limited success, and therefore the Government decided to amalgamate the universities to form a single integrated University of Ceylon. This was established in 1972.

Legislation, policy making and administration

The original University of Ceylon was established by the Ceylon University Ordinance of 1942.

The University was set up as a fully autonomous institution with a Court as the supreme governing body and a University Council as the chief executive body. A Senate, which included all the Heads of Departments, was to regulate all academic matters; and the Faculties, each of which was to have a Dean as its head, were to be controlled by their own bodies, subject to the overall authority of the Council and the Senate. This structure was essentially similar to that of many British universities.

The development and expansion of each of these proceeded quite independently and on an ad hoc basis. This led to much wasteful duplication of faculties, departments and courses of study. The expansion was very often not in keeping with the needs of the country. Scarce resources and the limited teaching staff that was available were spread out in a number of campuses, and teaching programmes in several departments became comparatively inefficient. Student intake and graduate output did increase but served no useful purpose. Many graduates could not fit into productive employment and only joined the ranks of the unemployed. The resulting frustration among the students led to much unrest.

New legislation was, therefore, enacted in an attempt to rectify the position. By the Higher Education Act of 1966 the structure of the universities was reorganized, the University Courts were abolished; the Councils were replaced by Boards of Regents which had more non-University representation, and a new statutory body - the National Council of Higher Education (NCHE) with wide powers to control the universities, was established.

The NCHE was entrusted with the task of co-ordinating higher education, the rationalization of the courses in the various universities, the integration of higher educational programmes with the needs of the country, advising the Minister of Education on all matters pertaining to higher education, and also with the framing of regulations governing, among other matters, the recruitment and conditions of service of staff.

The NCHE did some valuable work, especially in bringing about some uniformity in the standards and conditions of service of university staff, but it was much less successful in arresting the unco-ordinated proliferation of departments and courses. In some departments the staffing position continued to worsen as their qualified teachers left to join the new departments that were being created. The new departments admitted relatively small numbers of students and as a result the average expenditure per student increased (see Table 1). Early in 1971 a committee was, therefore, appointed by the Minister of Education to

report on the reorganization of higher education, and on its recommendation the Government decided to reconstitute the universities and to set up a single "University of Ceylon" with each of the four old universities as constituent campuses and to add a College of Technology which had been established some years earlier at Katubedde, a few miles south of Colombo, as a fifth campus. At the same time it was decided to restructure and amalgamate faculties and departments, where necessary, so as to utilize the available teachers and scarce resources to the best advantage. Legislation for this purpose was passed in January 1972 and the new Integrated University came into operation on 15 February 1972.

Financing

Higher education is financed in Ceylon almost entirely by the State. At present the Government grant accounts for about 80% of the total income of the University. The recurrent grant made each year is determined on the basis of estimates of expenditure submitted by the University. The total expenditure on university education was Rs. 1,294,000 in 1942/43. It rose to Rs. 11,417,000 in 1960/61. Rs. 16,586,000 in 1964/65 and to Rs. 40,221,805 in 1970/71. (See Table 1). As may be seen from this table the expenditure per student per year has risen from Rs. 1,507 in 1966/67 to Rs. 3,304 in 1970/71.

In addition to the recurrent grant each year, the Government provides a further grant for capital expenditure for buildings, equipment etc. This has risen from Rs. 3,753,769 in 1966/67 to Rs. 13,967,261 in 1970/71.

Courses, admission requirements, staff and students

The University now provides in the five campuses in over 130 departments of study courses in arts (including social sciences, humanities etc.), science, law, medicine and dentistry, engineering, and in agriculture and the veterinary sciences.

Admission to the University is competitive and is based on the results of the previous Ceylon General Certificate of Education (Advanced Level) Examination. Candidates have to offer four approved subjects at this examination, pass in at least three with a minimum of not less than 25% marks in the 4th subject, and have a high aggregate mark for admission. All candidates are required to have passed the G.C.E. (Ordinary Level) Examination, satisfying the various faculty requirements, before they appear for the Advanced Level Examination.

The number admitted was 6,359 in 1965. From the following year the numbers were reduced. 3,457 candidates were admitted in 1970 (Table 2). The total undergraduate enrolment was 14,166 in 1965/66. This has been progressively reduced over the last five years and was 11,813 in 1970/71. The latter figure is one closer to the number which can be accommodated with the present facilities. In 1966/67 there were

62.7% men students and 37.3% women students. By 1970/71 the proportion of women had increased and the percentages were 55.6 and 44.4 respectively.

A large majority of the students follow courses in arts subjects (Table 3). The main reason for this is that admissions to science and science-based courses is limited by laboratory accommodation. Most students follow the three-year general degree courses in arts or science. Those following special courses have to spend four years. The medical degree course lasts five years.

The total number of the teaching staff (both permanent and temporary) was 756 in 1966/67 and this rose to 1,163 in 1970/71 (Table 4). Normally teachers are recruited as probationary assistant lecturers, and the requisite qualification for this is a first class or second class (upper) honours degree in the Special Examination in the appropriate subject. After one or two years they are normally given full-pay leave to get post-graduate qualifications and are confirmed as lecturers once they obtain these qualifications. When a teacher goes on probationary leave, a department is usually provided with a temporary teacher in his place. Even though the average figures of the staff-student ratio appear very satisfactory, in certain departments, especially in the Arts Faculties, the number of students per teacher is extremely high.

The graduate output progressively increased up to 1968 (Table 5) but, as a result of the reduced admissions from 1966 onwards, it is now showing a decrease.

At present a large majority of students follow undergraduate courses, but in many faculties facilities are available for post-graduate work and students with appropriate first degrees may register for higher degrees.

Student life and welfare

At the Peradeniya campus about 75% of the students are provided with residential facilities. In the others only a smaller proportion have this facility. Faculty Student Unions and Campus Student Councils organize student activities. A student health service with resident medical officers and sports facilities with instructors in physical education are available for the students.

Needy students are provided assistance in the form of loans. These loans are repayable when they secure employment. Loans, each to the value of Rs. 1,000 per year, are given to deserving students. 5,164 students, i.e. about 44% of the total enrolled, availed themselves of this facility in 1970/71.

In addition scholarships and studentships are awarded to students on the results of the first year examinations. In 1970/71 a sum of Rs. 225,000 was allocated for this purpose.

Non-university institutions

Tertiary-level education is also imparted to students at the Ceylon Technical College, Maradana, and also at various polytechnical institutes and at the teacher training colleges.

The Technical College at Maradana provides diploma courses in valuation, commerce and accountancy and the polytechnics provide courses in business studies.

The teacher training colleges provide general courses, and special courses in a number of subjects. 5,253 students now follow the general courses, and 3,128 the special courses. In addition 2,574 students follow a general correspondence course.

For the higher studies of Buddhist monks a special institution, the Buddha Sravaka Dharmapitaya, has been established at Anuradhapura.

In addition to the above institutions, which are all run by the State, there is a Ceylon Law College which provides a professional training in law. This is run by the Council of Legal Education and is a fee-levying institution.

Faculty reorganization

A major reorganization and redistribution of faculties and departments is now in progress.

Academic disciplines are becoming increasingly specialized and sophisticated, and more funds are needed to provide adequate facilities for conducting a teaching course. With the limited resources courses cannot be provided in all major fields in every campus. The setting up of several small and weak departments has resulted in a dissipation of resources. Wasteful duplication has to be avoided and the various campuses should as far as possible provide complementary courses. With this objective in view, a number of faculties and departments are to be closed down and their staff transferred to other campuses. It is proposed to phase out this reorganization over a period of two to three years so as to avoid any inconvenience to the present students and to enable them to complete their courses of study in the campuses to which they were originally admitted.

Admissions, courses of study and examinations

At present students are required to enter the University in the year they qualify for admission. It is proposed to allow students to defer entry up to a period of about five years if for any reason they wish to do so. It is hoped that this would encourage students to get some work experience before entering universities. Moreover, students who may be prevented from taking courses of their choice because they do not have the prerequisite G.C.E. (O. Level) qualifications may take those during this period and seek admission for the preferred courses.

Up to now arts students have had the full freedom to select subject combinations for the degree courses. This has resulted in wide fluctuations in student numbers for certain subjects and made teaching arrangements very difficult. It has also created problems for graduates as very often large numbers of students who have followed popular subjects have to compete for a limited number of jobs.

As from 1972, quotas are to be fixed for admissions to particular subject combinations. Emphasis will be given for combinations providing socially useful skills, and the numbers admitted each year are to be related as far as possible to the estimated manpower needs of the country. In early 1973, a Women's College is to be established in Colombo. This will provide courses in subjects like home economics, care of the pre-school child, etc. which are of special interest to women students.

In the past degrees were usually awarded on the results of a single terminal examination held at the end of the three-year or the four-year course. In several faculties the Course Unit System and annual examinations have already been introduced. Attempts are now being made to replace practical examinations by course work assessments. Objective-type tests are now being used for certain examinations in the Medical Faculty, and it is proposed to extend the use of tests of this type to the other faculties as well.

Research

Although it is recognized that university teaching and research are intimately related and that continuous research is one of the main functions of a university, the heavy burden of teaching and examination work has hindered the development of research schools.

With the proposed reorganization and the amalgamation of certain departments, it is envisaged that the teaching load would be reduced and that it would be possible to build up in each faculty teams of specialists large enough to make possible the setting up of viable research schools.

Problems of higher education

In terms of numbers of teachers and students, and the graduate output, Ceylon's figures are quite impressive. There is a general impression in the country, however, that the universities have to a large extent failed to meet the needs of society. This is not without some justification, for the universities have not changed fast enough to adapt themselves to the rapidly changing society of the present-day world. The reorganization that is now in progress will remedy some defects. The proposed changes would enable the country to utilize its resources to better advantage and thus improve courses. This alone is not enough. Many of the attitudes have to be re-oriented.

Work and study cannot and should not be kept apart for too long. A prolonged period of academic study alone without any actual work experience makes a person highly theoretical and idealistic. The traditional method of learning arts and crafts was by doing things, what we call "apprenticeship". This provided facilities for youth to participate in society and develop initiative, a sense of value, and a sense of responsibility - qualities essential for leadership, but which cannot be instilled by lectures alone or formal class-room teaching. For the tertiary level student work and study should, wherever possible, be integrated. This would help to produce productive members of society whose idealism is tempered with some realism.

Further, teaching and learning cannot be separated. The two are so intimately related that every effort should be made to get all teachers and students fully involved in the teaching-learning process. A teacher has to be a researcher and learner all his life if he is to remain an efficient teacher. A student should be aware of the teaching techniques to be able to teach himself if he is to be an effective learner.

Finally, the university cannot isolate itself from society; rather, close communications should be established between the two. Each should be both sensitive and responsive to the needs and problems of the other. The quality of the products of a university would depend on the nature of the raw material provided, and the products can never be "finished products". Learning a skill is no longer a training for life. Much of today's learning was unknown 10 or 20 years ago and much of it would be outdated in 10 or 20 years. Education to-day has to mould and inform the man of 20 years hence. It should provide the basic knowledge in the disciplines concerned and an efficient training for continuous self-education for the rest of one's life. The university should serve as a centre for this continuing education. The education has to be planned with a good understanding of the past and the present, and above all, with a realistic vision of the future.

Statistical data

Table 1. Enrolment, total and per student recurrent expenditure in the universities 1966-1970

	University				Total
	Peradeniya	Colombo	Vidyodaya	Vidyalankara	
1966/67					
Enrolment	10 423		1 863	2 136	14 422
Expenditure (Rs.)	17 213 000		2 485 781	2 036 325	21 735 106
Expenditure per student (Rs.)	1 651		1 334	953	1 507
1967/68					
Enrolment	5 406	4 740	2 093	2 058	14 287
Expenditure (Rs.)	13 001 205	6 576 165	2 762 468	2 629 122	24 968 960
Expenditure per student (Rs.)	2 404	1 390	1 319	1 277	1 747

Table 1. Enrolment, total and per student recurrent expenditure in the universities 1966-1970 (cont'd)

	University				Total
	Peradeniya	Colombo	Vidyodaya	Vidyalankara	
1968/69					
Enrolment	4 995	3 564	2 412	1 715	12 686
Expenditure (Rs.)	14 695 190	8 402 049	3 627 369	3 207 761	29 932 369
Expenditure per student (Rs.)	2 941	2 357	1 503	1 870	2 359
1969/70					
Enrolment	4 523	3 655	2 283	1 398	11 859
Expenditure (Rs.)	15 911 833	8 699 864	3 543 934	3 301 656	31 457 287
Expenditure per student (Rs.)	3 517	2 380	1 552	2 361	2 652
1970/71					
Enrolment	4 253	3 642	2 501	1 774	12 170
Expenditure (Rs.)	18 965 610	11 892 082	4 650 928	4 713 185	40 221 805
Expenditure per student (Rs.)	4 459	3 265	1 859	2 656	3 304

Note: Enrolment includes post-graduates.

Table 2. Number of new entrants by field of study 1966-1970

Academic year	Field of study								
	Arts	Law	Sc.	Med.	Dent.Sg.	Engi.	Agri.	Vet.Sc.	Total
1966/67	2 841	25	345	230	25	152	18	20	3 656
1967/68	2 854	34	415	231	27	149	29	21	3 760
1968/69	2 733	29	351	227	25	149	37	20	3 571
1969/70	2 285	52	337	229	21	149	38	18	3 129
1970/71	2 454	48	451	247	41	152	43	21	3 457

Table 3. Undergraduate enrolment by field of study 1966-1970

Academic year	Field of study								
	Arts	Law	Sc.	Med.	Dent.Sg.	Engi.	Agri.	Vet.Sc.	Total
1966/67	10 902	72	827	1 551	95	571	83	70	14 171
1967/68	10 656	93	964	1 500	101	616	103	77	14 110
1968/69	8 941	87	1 053	1 375	95	650	114	77	12 392
1969/70	8 011	105	1 159	1 421	84	551	137	80	11 548
1970/71	8 284	129	1 252	1 233	99	577	161	78	11 813

Table 4. Permanent and temporary teaching staff by field of study 1966-1970

Academic year	Field of study						
	Arts	Law	Science	Med. and Dent.	Engi.	Agri and Vet. Sc.	Total
1966/67	380	7	160	120	64	25	756
1967/68	405	7	181	119	75	24	811
1968/69	453	7	204	146	77	37	924
1969/70	485	10	256	139	93	50	1 033
1970/71	554	11	286	166	95	51	1 163

Table 5. Number of graduates by field of study 1966-1970

Academic year	Field of study								
	Arts	Law	Sc.	Med.	Dent.Sg.	Engi.	Agri.	Vet. Sc.	Total
1966	2 486	25	208	203	17	95	25	15	3 074
1967	2 848	25	238	267	21	100	13	13	3 525
1968	3 822	25	190	403	21	113	22	18	4 614
1969	3 598	63	234	216	27	135	26	18	4 317
1970	2 804	58	323	282	25	206	24	13	3 735

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HIGHER EDUCATION IN INDIA

by D. Shankar Narayan

India to-day has one of the largest education systems in the world with a total enrolment exceeding 75 million students and over two million teachers. In higher education alone, there are over three million students including half a million girls, and the number engaged in research is around 60,000. There has been a remarkable upsurge in education in India since independence, but it is only to be regarded as the beginning of an educational revolution crucial to the economic and social development of the country. To-day three out of every 100 of the population in the relevant age-group are in higher education. The enrolment in higher education over the last decade or so has been increasing at a rate as high as 11% annually with a doubling period of less than 10 years. India, again, is one of the few countries in Asia where educational planning and policy have received a good deal of attention, and efforts are being made to make education science-based and to fully recognize the importance of education in science to national development.

Historical background of the development of higher education and universities in India

In India, university education, in the generally accepted sense of the term, began with the establishment of the first Indian universities in 1857 in Calcutta, Bombay and Madras. These three universities along with their affiliated colleges, served the needs of the country for the first 25 years. For almost the next 20 years no new university came into existence. In the meanwhile, the growth in higher education continued unabated and the affiliating system made it possible for a university to bring new colleges and a growing body of students under its aegis without augmentation of its own campus facilities. This meant that a large part of the student population was non-resident and the higher education was chiefly in "the liberal arts" with emphasis on literary and classical studies but very little of science education or research work.

In 1902 a Universities Commission was appointed to examine the needs of university education. The Commission's recommendations resulted in the Indian Universities Act of 1904, and the five universities

established until then gradually began to organize some teaching departments at the university headquarters; and some steps were taken to exercise more effective control over the affiliated colleges. In 1913 the Government of India passed a resolution proposing a limitation in the territorial jurisdiction of each university and opening of new universities in each of the provinces. It was suggested that these new universities should be "teaching and residential". The Government's desire was that the existing universities should develop teaching facilities and provide for a residential corporate life which would be conducive to social and moral as well as intellectual progress.

The Calcutta University Commission, generally known as the Sadler Commission appointed in 1917 whose terms of reference included the secondary education as well as collegiate and university education, made far-reaching proposals for the improvement and modernization of education in India. Its recommendations included the creation of "Intermediate" colleges to provide for a two-year preparatory course before entry to the university and establishment of boards of secondary and intermediate education to regulate the work of the colleges. The most significant recommendation related to the greater participation of teachers in the governance of universities, greater co-operation between universities and colleges, more autonomy and less governmental control and the appointment of full-time vice-chancellors. The universities established subsequent to the report of the Sadler Commission incorporated some of the recommendations in their constitutions.

During the last 25 years since independence, universities came into existence in quick succession and nearly 65 universities have been established.

Among the new universities are eleven agricultural universities established between 1960 and 1970. The inspiration for the creation of separate universities with agriculture and related sciences as their major concern came from the land grant colleges concept of the U. S. A. In fact most of them were established in co-operation with the land grant universities in the United States. In addition to the new universities created since 1947, a number of other institutions of higher learning have been given university status by being "deemed" to be universities under a provision of the University Grants Commission Act of 1956. There are at present 9 such institutions. Besides these, some institutions have been empowered to award degrees by special enactment of the Parliament.

Besides these universities and the institutions empowered to grant academic degrees, there are other research institutions recognized for work leading to award of research degrees.

The Indian higher education has been constantly under review by a number of commissions and committees appointed since the time of the Sadler Commission report in 1919. These committees have enquired into the needs and problems of Indian universities and suggested various

kinds of reform in the organization and constitution of the universities, curriculum and methods of instruction and examination and also governance of universities.

The report of the Education Commission called "Education and National Development" has dealt elaborately with various aspects of education from the school to the university level and has recommended several structural reorganizations for modernization of education in the country. The report portrays the national thinking on educational policy and reconstruction to make education an effective instrument of change towards development and prosperity in a science-based world. The basic approach and philosophy adopted in this report rests on a deep conviction that the progress, welfare and security of the nation depend critically on a rapid, planned and sustained growth in the quality and extent of education and research.

A major landmark in the Indian higher education system relates to the establishment of a University Grants Commission by an Act of the Parliament in 1956 as a statutory body entrusted with the task of co-ordination and improvement of standards of higher education and providing universities and colleges with funds for improvement of standards of teaching and research and examination. Since the establishment of the Commission, the universities have been able to make considerable progress and bring about some reforms and improve their physical facilities by way of laboratories, libraries, residential buildings, and establish a few recognizable research schools in various disciplines.

Education is a state subject and each state government is free to determine and adopt its own variation on any proposal for change or experimentation or modernization suggested by the Government of India through its committees and commissions. Since the first universities in India began as affiliating and examining bodies, a persistent problem has been that of making the universities teaching bodies and securing a closer co-operation and integration of the affiliated colleges with the universities. Several of the affiliated colleges are privately managed and are therefore short of funds to bring about any reforms. All these have added to a very slow pace of modernization, resulting in a scattered system of institutions of unequal quality and capacity and with varying ideas about the nature and purpose of higher education. Since education is a state subject, the responsibility for maintenance grants is that of the State Governments and the managements of individual colleges and the finances made available by the University Grants Commission are mainly used for development, growth and experimentation of new educational ideas and programmes. Except for the Central Universities, at present five in number and established by an Act of the Central Parliament, all other universities are brought into existence by legislation of the State Governments.

A notable feature of Indian higher education in the past two decades has been a relatively rapid increase in the number of persons graduating in science and technology. It represents a growing awareness and desire for education in science and science-based courses. It is also stimulated by the larger possibilities, on the whole, of employment open to graduates of science and professional subjects. The output of science graduates and in science-based professional courses has increased more than four times within the period of 15 years. The output at the post-graduate level and the doctorate level is almost five-fold over the same period.

The Inter-University Board of India and Ceylon established in 1925 provides a common forum for discussion of common university problems, acts as a bureau of information and facilitates mutual recognition of academic degrees and brings about the inter-university collaboration in various areas. Through its subsidiary board, it also conducts inter-university sports tournaments. The University Grants Commission has also taken several measures to bring about collaboration between university institutions and national laboratories of the Council of Scientific and Industrial Research, Atomic Energy Commission etc., and other R & D organizations.

Constitutionally, owing to the developments that have taken place over the past 100 years or so, the universities fall into three or four categories: (1) the affiliating type, with some teaching work especially at the post-graduate level directly undertaken by the university; (2) the unitary type with all the teaching and research carried out at one campus; (3) the federal type, usually limited to a major city with a number of universities or constituent colleges closely associated with the work of the university and (4) the purely affiliating type. There are over 3,400 colleges either affiliated to or as constituent colleges of the 84 universities.

Admissions and duration of courses of study

Although all qualified students passing the examinations prescribed for admission to the university have a right of admission, a selection process to choose the best students for different courses is inevitable in view of the limited number of places available. This is particularly true in the case of professional courses, such as medical, engineering, commerce and teacher training institutions and in most cases for the science subjects as well. Each university lays down its own criteria for admissions for the first degree courses as well as the post-graduate courses.

The first degree course in humanities, social sciences and science subjects is generally of three years' duration after a one or two-year pre-university or intermediate examination and in a few cases after the higher secondary examination. Only the universities in the State of

Uttar Pradesh and the University of Bombay have continued to retain the two-year degree course after the Intermediate examination. The first-degree courses in medicine and engineering are usually of about five years' duration with minor structural variations. The requirement for admissions to post-graduate studies and research is generally the possession of a first degree in the same faculty. The Master's degree is of two years' duration and generally consists of courses and some introduction to research. The Ph. D. or D. Phil. degree can only be taken by research and usually takes a minimum of three years. Besides Ph. D., some universities offer D. Lit. and D. Sc. degrees as well on the basis of excellence of independent research work. Most universities also conduct diploma courses in a variety of subjects and in a number of foreign languages. These diploma courses may be from one to three years' duration. The academic term is generally divided into three terms in most universities and begins in June-July and ends in March-April with a few exceptions.

The teaching staff in university departments includes professors, readers, lecturers whereas the affiliated colleges may have professors, assistant professors, senior lecturers and lecturers. The appointments are generally made on a permanent basis with an initial period of probation. Contract appointments are extremely rare. The total number of teachers in the university departments in 1970 was about 22,000 and included approximately 10% professors and 15% readers and the balance in the form of lecturers. The affiliated colleges account for about 85% of the total student enrolment. At the post-graduate level, the colleges account for 49% of the Master's degree students and about 13% of the research scholars.

Students and student facilities

Most universities enrol only full-time students, but in recent years, evening courses and part-time courses have been introduced. Similarly correspondence courses have also been introduced in a few universities at the first degree stage. About 20% of the students reside in hostels and the majority of the students are day scholars. The universities and colleges have, in recent years, introduced several welfare programmes for students. Most universities and colleges have their own students' union or representative councils besides a number of science and literary societies to encourage the talents of the students. Provision is made for military training through the National Cadet Corps Scheme, and recently the National Service Corps Programme has been introduced. A few universities have student counselling and guidance bureaus. A number of scholarships and fellowships are available to students, mostly at the post-graduate and research level. The colleges and universities help the students by award of free studentships, wherever warranted.

Statistical data

Statistical tables appearing at the end of this article give information regarding student enrolment, degrees awarded, number of teaching staff, and distribution of colleges according to courses of study.

Education Commission's report

The report of the Education Commission (1966) deals in great detail with the problems of higher education and has made several recommendations laying special stress for improvement of quality and pursuit of excellence in education at all levels and in all sectors. It has recommended expansion of enrolment over the next two decades in agriculture and engineering and in post-graduate courses in science subjects. The Education Commission has felt that the present stage of development of higher education is critical for the country's national development.

Problems and programmes

Some of the major problems of the present day higher education (with special reference to science and science-based education) in the universities relate to the following:

a) Regional imbalances in enrolments in science and science-based courses;

b) Inadequate and low standards of instruction and out-dated curricula and examination system;

c) Medium of instruction;

d) Problems of teacher training and retraining;

e) Inadequate facilities of scientific equipment and textbooks;

f) Wastage and under-utilization of science, engineering and technology graduates;

g) University type of research undertaken outside the universities;

h) Research unrelated to economic and development needs of the country.

Regional imbalances in science and science-based education is a feature associated with a developing country like India. There is wide variation in the facilities for higher education amongst the different States in the country. Enrolment in science courses expressed per unit of the total population is highest in the four Southern States and is about 2,200 per million ranging down to about five hundred per million in some Northern States. This imbalance in science education and even more so in technology has a direct effect on the pace of industrial development in different regions of the country.

There is an urgent need, in general, for revising drastically the undergraduate and post-graduate curricula to bring them on par with the level and contents of the university courses in some of the scientifically advanced countries. The importance of field work and environmental studies in biological and earth sciences needs to be stressed. Industrial and agricultural applications of science subjects should be clearly and forcefully brought out and listed in terms of local industries and experience accessible to students. In the case of the physical sciences, proper balance needs to be maintained between the experimental and the theoretical aspects of education.

Medium of instruction

The introduction of regional languages of India as media of instruction at the higher education level has made some progress. This change-over from English to regional languages could only be considered as an integral part of a total plan of bringing education closer to the needs and aspirations of the people. But higher education is a closely integrated system and therefore any change-over should be aimed at helping improvement of standards. The manner and speed of the change-over has been left to each university. It is generally expected that regional languages would be the media of instruction at the undergraduate level in a major part of the university system. English would continue to be largely the medium at post-graduate level, at least in science, medicine and technology.

One of the factors of vital importance for an effective science programme at the university level relates to timely and adequate supply of standard equipment needed for teaching and research work. This is of great importance since more and more reliance will have to be put on indigenously produced equipment and instruments and import only such sophisticated equipment whose production within the country would be uneconomical and whose import is inescapable. Measures will have to be found for an efficient use of the existing equipment. The analysis of the types of equipment generally required at the college and university levels reveals that it should be possible to meet nearly all the needs from indigenous manufacture, provided such manufacture is subject to strict quality control and standardization. The Indian scientific instrument industry should rise to the occasion to rapidly supply the essential equipment as well as produce essential spares to help in repair and maintenance and reclaiming of obsolete and worn-out equipment.

The university-based science complex in India is generally faced with the twin problems of increasing enrolments and the maintenance of proper standards. This is particularly true of the first-degree level and more so in the colleges affiliated to the universities which account for more than 80 % of the total enrolments. Several programmes taken up for assistance to colleges providing science education at the first-degree level, such as the introduction of the three-year degree, expansion

of science education, assistance for improvement of laboratory and library facilities, have helped to strengthen the essential base required for a purposeful science education. The emphasis in the past 15 years has been mainly on the improvement of quality, particularly at the post-graduate level, because the post-graduate courses occupy a key position in the university system and also represent a sector of manageable dimensions. Improvement of post-graduate education will have an immediate impact on the quality and standard of the entire education system. Better post-graduate education will also lead to better research.

Besides assessing the financial needs of the universities and colleges and providing them, on a five-year plan basis, funds for improvement of the laboratory, library, workshop and other physical facilities and appointment of academic and technical supporting staff, the University Grants Commission has initiated several programmes specifically aimed at improvement of quality of higher education and research in universities and colleges in India. Some of these programmes are briefly described in the following pages.

Establishment of Centres of Advanced Study

An urgent need in the field of higher education in India is the strengthening of post-graduate teaching and research and channelling of the existing limited resources effectively for this purpose. The University Grants Commission has therefore undertaken in consultation with the universities a scheme for developing selected university departments for advanced training and research in certain specialities. The Scheme is intended to encourage the pursuit of "excellence" and team-work in studies and research and to accelerate the realization of "international standards" in specific fields. With this object in view, active support and substantial assistance is given to promising departments in the universities carefully chosen on the basis of the quality and extent of work already done by them, their reputation and contribution to research, and their potentiality for further development.

A beginning was made by providing assistance to about 30 university departments for obtaining competent and promising teachers and research workers and procuring essential equipment. To be viable, such "Centres of Advanced Study" have to exceed a certain "critical" size as regards their staff. The departments concerned would therefore have a fairly large staff of professors, readers and research associates fellows of outstanding ability and qualifications who are actively engaged in research and advanced training. A substantial proportion of the team would be a kind of "floating staff" coming to these centres for long or short periods on deputation from their universities/institutions and possibly from abroad. As they would be functioning on an all-India basis, they would attract teachers and scholars from all over the country and help in maintaining and strengthening the corporate intellectual life in

the country. Another advantage accruing from the scheme would be that the personnel trained in the centres would in the course of time be available for strengthening the staff of other university departments, thus helping to meet to some extent the present difficult position experienced by the universities in securing qualified and competent teachers in adequate numbers.

The establishment of Centres of Advanced Study or "Centres of Excellence" is a step of considerable significance in universities. In case centres of this kind are not built within the universities, such institutions will inevitably grow or be provided outside the university system. The result would be grossly disadvantageous to the universities and would seriously weaken them. In view of the importance of this programme in a developing country, such as India, the University Grants Commission has received considerable support and financial assistance for its strengthening from Unesco, (mostly from the USSR) and also from the United Kingdom. The international collaboration and assistance provide for exchange of personnel, fellowships for training and supply of sophisticated items of equipment essentially required for the work done in the Centres of Advanced Study.

The Commission, with the help of the Standing Committee, continuously evaluates, on a comparative basis, the stage of development of different university disciplines with a view to identifying some departments which have reached a certain critical stage of growth in relation to their teaching and research programmes and provides them with special assistance. This special assistance would enable such departments to consolidate and strengthen their teaching and research programmes in a worthwile discipline and possible recognition as centres of advanced study at an appropriate time.

Development of selected institutions, selected courses of study in applied and inter-disciplinary subjects

In view of the urgency and the need of developing within the universities facilities for study of applied science and inter-disciplinary subjects of vital importance, the University Grants Commission has supported programmes of development of such subjects as biochemistry, applied geology and geophysics and genetics in a few selected universities. Recognizing the need to introduce an element of flexibility and innovation in the organization of M.Sc. courses, support has been given for the setting up of Departments of Life Sciences or Biological Sciences to provide for an integrated approach and inter-disciplinary interaction between related disciplines in the area of life sciences. Efforts have also been made in the field of environmental sciences to bring together the relevant departments and also interaction between different faculties within the university. Integrated research programmes on a multi-institutional collaboration basis have been taken in the field of earth

sciences to bring about collaboration between universities and also between universities and national laboratories. Area studies programmes have been encouraged in the field of social sciences. During the past two years, two separate councils have been established to encourage research in humanities and social sciences, viz., the Indian Council for Social Science Research and the Indian Council for Historical Studies.

Standards, curriculum and examination reforms

An expert committee of the University Grants Commission was appointed some years ago to undertake a systematic and objective study of the standards prevailing in the Indian universities and to make necessary suggestions for their improvement and make them comparable to the international standards. A number of review committees have examined the status and existing facilities for training and research, courses of study and syllabi in various subjects, and have made necessary suggestions for rationalization and modernization of syllabi and also the future lines of development of these subjects and programmes of study and research. The reports made by the Review Committees have been given due consideration by many universities, and courses and syllabi have been revised to bring them to the desirable modern level. The work of the review committees has been followed up by the appointment of panels of experts in closely related subject groups to implement the recommendations, to draw attention of the Commission to problems to be dealt with in each subject, and to suggest suitable action for their further development and improvement.

The outstanding curricular problem at the university stage is the maintenance of equilibrium between specialization, professional preparation, preparation for life and citizenship. In this respect the attitudes of the specialized faculty is important both in imparting general education as well as in providing specialization and concentration. The Binational Conference in Physics, Chemistry and recently in Life Sciences held since 1968 have emphasized the need to recognize the B. Sc. degree as the most crucial stage in the university education and therefore to make it as broad-based and flexible as possible in the context of Indian education. The intention is to provide at this stage an acquaintance with scientific developments, theories and practices and thus develop the necessary scientific attitude required both by the science user as well as by the scientist, rather than the present method of taking inventory of facts about science. The curriculum structure would provide for a coverage in broad areas of science and also provide for about 25% of the total work in an elective way to provide for either concentration or spread according to the aptitudes of the students.

Another committee examined the system of university examinations and suggested reforms for the purpose of putting into effect a more

rational assessment of the academic performance of the students. These recommendations have been taken note of by the universities, and some of them have initiated pilot projects in this field and introduced such measures as selective admissions, tutorials and preceptorials and given weightage for the sessional work done by the students during the academic year and thus reduce the importance so far given to the annual examinations. A few of the universities have switched over to the semester system of courses and examinations.

Organization of summer institutes, refresher courses

Another important programme relates to the organization of summer institutes, seminars, symposia, refresher courses etc., designed for training and retraining of teachers. The organization of summer institutes for school teachers in the universities, apart from those organized for college teachers, brings the school teachers in close contact with the university teachers and helps the participants to improve their subject-matter competence, learn new methods of teaching and the use of educational materials etc., and in this way to reform their own teaching in their schools.

College Science Improvement Programme (COSIP)

The College Science Improvement Programme taken up in the past two years is mainly designed to build a quality sector in undergraduate science education. The two parts of this programme, viz., the University Leadership Project and the Selected Colleges Project would establish effective channels of communication between the university and the teaching departments and bring about the necessary modernization in respect of curriculum development, production of teaching material, both text as well as demonstration, and provide reasonable opportunities for improvement of teachers' competence and effectiveness and allow sufficient scope for project work to be undertaken by the students at the first-degree stage. The University Leadership Project would further bring about desirable changes in the syllabuses, courses of study and examination method within the subject concerned. The Selected Colleges Project would set in motion the processes which would enable them to function better within the given university system and framework, identify their strong as well as weak points, and take up programmes which would help to make the strong points stronger and also eliminate the weaknesses. The innovative programmes to be taken up by the departments within the college would reflect the motivation of both students and teachers and demonstrate that, even within the present system of affiliation with the universities, it would be possible for the colleges to provide better instruction in science subjects. Once the selected colleges programmes have built up sufficient strength, they would act as the growth points for bringing about the necessary modernization process and change within the entire university system.

Award of scholarships and fellowships for advanced study and research

The University Grants Commission awards annually over 1,000 scholarships and fellowships for advanced study and research in universities and colleges. In addition, special scholarships and fellowships are available to encourage bright students to take up advanced study or research in the centres of advanced study and in subjects like applied geology, geophysics and engineering subjects. This helps to promote academic mobility.

Support for scientific research

The support available for university research at present is totally inadequate in relation to the total research effort and manpower in the university system. A beginning has been made by providing small sums of money to each university for support of research. But as has been pointed out by the Committee on Science and Technology, the universities should be adequately supported both for individual research programmes as well as group research activities as distinct from the departmental support for teaching and research in an integrated manner.

Production of textbooks

In the context of the prevailing situation where higher education in the country, and specially in science, technology, agriculture and medicine, is to a large extent dependant upon foreign books, it is of the utmost importance that every effort is made to produce books of a high standard in different subjects within the country. A small proportion of foreign textbooks are republished in India through international collaboration programmes. This, however, does not meet the demands of higher science education adequately, since the coverage in the field of science and technology by the books written within the country is almost negligible. The Government of India, the State Governments and the University Grants Commission have undertaken several programmes for production of textbooks on a large scale through involvement of outstanding teachers and researchers. The U. G. C. scheme also aims at developing a cadre of young authorships to be trained initially in the techniques of preparing the manuscripts under the guidance of senior reputed teachers in the universities.

International collaboration and contacts between scientists

The departments recognized as Centres of Advanced Study, in particular, and selected university departments, in general, have been assisted in the establishment of contacts with their counterpart departments in other countries through international collaboration programmes. A programme of significance and aimed at establishing such contacts between younger scientists in the age-group 25 and 35 years has been

developed between India and the United Kingdom, and the programme of summer institutes provides similar contacts between younger scientists of India and the United States of America. The Commission coordinates the requirements of the universities for services of experts and training of personnel abroad in a number of technical assistance programmes and cultural agreements entered into by the Government of India with other countries. Joint collaborative research projects have also been undertaken between universities in India and other countries like the United Kingdom, the United States of America and the Union of Soviet Socialist Republics.

The facilities of the Centres of Advanced Study and other quality departments and institutions could be utilized also by the countries in the region for meeting their needs of post-graduate education and research in specialized disciplines. It will be of real value to develop for this purpose suitable long-term operational plans for collaborative programmes within the region, including exchange of specialist research personnel and students and scientific literature.

The programmes listed above have had a considerable impact on the improvement of quality and have brought about an upsurge of excellence in the field of higher education in the colleges and universities. These programmes have also acted as a necessary stimulus for an overall improvement of quality and standard of higher education in the country; but it has to be confessed that what has happened represents only a small beginning of the considerable work that remains to be done.

Conclusion

Taking note of the background of the Indian education system, as it existed before some of the reforms listed above were taken up in recent years and the changed context of Indian education to-day, it is necessary to identify a few key sectors and programmes and to channel the available resources for the implementation of these programmes. It must also be recognized that facilities, theories and methods of education applicable to smaller numbers 20 years ago have now become useless and in a way anachronistic. Several of them have even become distorted and out-dated. Pedagogic inflexibility, lack of attention to the need for individualization in instructional methods and a resistence to innovation and experimentation are some of the causes which have led to wastefulness, high dropout rate, negative selectivity, loss of potential talent and above all the prevailing sense of frustration and failure to the individual himself. What is normally required in this context is not denial of the educational opportunities or attempts to lower the high standards of achievement of some of the institutions by democratic processes but the development of standards and of practical arrangements that recognize talent and achievement in a greater variety of forms. A fundamental need therefore is for a reconstructed conception - moral

and philosophical - of the purpose of education capable of responding to the need of the modern Indian society. The process of modernization should be brought about by a number of different, though related, changes which would involve (a) the renovation and augmentation of the physical facilities; (b) experiments with new pedagogical methods relying on scientific enquiry into psychology and sociology of education in the context of science-based developments; (c) the alterations of curricula to produce adequately trained professional and semi-professional talent needed by the economy; and (d) the development of an education system that gives its principal emphasis on a spirit of innovation and transmission of received ideas.

Statistical data

Table 1. Student enrolment, stage-wise, 1968-69 to 1970-71

Stage	1968-69		1969-70		1970-71 (estimated)	
	Enrolment [1]	% of total	Enrolment [1]	% of total	Enrolment [1]	% of total
Pre-university	517 021	20.9	562 947	20.2	631 598	20.3
Intermediate	375 558	15.2	423 174	15.2	455 338	14.6
Pre-professional	14 582	0.6	13 809	0.5	16 334	0.5
Graduate	1 388 335	56.1	1 603 898	57.4	1 796 787	57.7
Post-graduate	135 459	5.5	146 804	5.3	163 344	5.3
Research	12 145	0.5	12 474	0.4	13 612	0.5 [2]
Diploma/certificate	30 164	1.2	29 524	1.0	35 391	1.1
Total	2 473 264	100.0	2 792 630	100.0	3 112 404	100.0

1. Including enrolment in intermediate classes under the Board of High School and Intermediate Education, U.P.

2. Adjusted from 0.44 to 0.5 to make the total percentage 100.

Table 2. Student enrolment, faculty-wise, 1968-69 to 1970-71

Faculty	1968-69		1969-70		1970-71	
	Enrolment [1]	% of total	Enrolment [1]	% of total	Estimated enrolment [1]	% of total
Arts (including oriental learning)	1 055 238	42.7	1 218 022	43.6	1 289 780	41.4

Table 2. Student enrolment, faculty-wise, 1968-69 to 1970-71 (cont'd)

Faculty	1968-69		1969-70		1970-71	
	Enrolment[1]	% of total	Enrolment[1]	% of total	Estimated enrolment[1]	% of total
Science	802 369	32.4	914 739	32.8	1 034 563	33.2
Commerce	255 568	10.3	296 325	10.6	311 240	10.0
Education	48 536	2.0	51 854	1.8	71 585	2.3
Engineering and technology	101 380	4.1	97 889	3.5	105 821	3.4
Medicine	90 470	3.7	95 017	3.4	133 833	4.3
Agriculture	53 120	2.1	43 415	1.6	87 147	2.8
Vet. science	6 590	0.3	6 131	0.2	11 204	0.4
Law	49 520	2.0	56 240	2.0	59 135	1.9
Others	10 473	0.4	12 998	0.5	8 096	0.3
Total	2 473 264	100.0	2 792 630	100.0	3 112 404	100.0

1. Including enrolment in intermediate classes under the Board of High School and Intermediate Education, U.P.

Table 3. Degrees awarded, 1965-66 to 1967-68

Faculty	1965-66	1966-67	1967-68
Faculty of Arts	119 429	145 703	168 184
Faculty of Science[1, 2]	51 129	59 424	69 757
Faculty of Commerce	24 271	26 037	30 779
Faculty of Education	25 772	30 679	34 010
Faculty of Law	8 705	10 167	10 076
Faculty of Agriculture[3]	6 005	7 117	7 227
Faculty of Vet. Science	1 184	962	1 281

1. Includes honours.
2. Doctorates in Mathematics have been included in the Faculty of Science.
3. Inclusive of output figures of the Indian Agricultural Research Institute.

Table 3. Degrees awarded, 1965-66 to 1967-68 (cont'd)

Faculty	1965-66	1966-67	1967-68
Faculty of Medicine	5 596	6 604	8 032
Faculty of Engineering Technology	10 347	13 269	15 707
Total	252 438	299 962	345 053

Table 4. Number of degrees awarded in percentage of the corresponding age-group

	No. of degree awarded		Percentage of the corresponding age-group		Average annual (compound rate of growth)	
	1950	1965	1950	1965		1967-68
B. Sc.	9 628	38 230	0.14	0.44	9.6%	40 769
M. Sc. (excluding mathematics)	851	5 525	0.013	0.067	13.3%	7 191
M. A. / M. Sc. (mathematics)	251	2 292	0.004	0.028	15.9%	2 064
Bachelor Degree in Technology (engineering and other subjects)	1 660	9 739	0.026	0.12	12.6%	14 383
Bachelor Degree in Agricultural and Veterinary Science	1 100	6 599	0.017	0.08	12.7%	7 300
Doctorate Degree in Science and Technology	100	522	-	-	12.0%	1 050

Table 5. Number of teaching staff by position classifications, 1968-69 to 1970-71

Types of teaching staff	1968-69	1969-70	1970-71
Professors	1 872	1 903	2 106
Senior teachers[1]	12 169	12 838	13 429
Readers	2 834	2 944	3 202
Lecturers [2]	80 311	86 809	94 739
Tutors/demonstrators	13 759	14 558	15 448
Total	110 945	119 052	128 924

1. Including principals.
2. Including assistant professors and lecturers.

Table 6. Distribution of colleges according to courses of study, 1966-67 to 1970-71

Course of study	1968-69	1969-70	1970-71
Arts, science and commerce	2 219	2 361	2 587
Engineering and technology	105	106	107
Medicine, pharmacy and ayurveda, nursing and dentistry	157	167	176
Law	77	85	91
Agriculture	53	54	57
Veterinary science	21	23	23
Education	224	235	258
Oriental learning	179	188	226
Others(physical education, music and fine arts)	77	78	79
Total	3 112	3 297	3 604

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HIGHER EDUCATION IN IRAN

by Akbar Etemad

The rapid and continuous socio-economic development in Iran in the past decade forcibly demands a corresponding change in the higher education system of the country. The urgent need for skilled manpower in industry, agriculture, communications and various other fields, plus ascendance of the standard of living, the greater demand of the people, and a strong inclination of the youth towards higher education, one and all render this change inevitable. The quantitative expansion of higher education, together with the increasing developmental needs of the nation, the nature of which has become more complex than ever before, have created an irresistible pressure towards qualitative and structural developments. This strong urge for quantitative expansion, and the need for qualitative and structural reforms constitute the principal problem of higher education in contemporary Iran.

Fortunately, in recent years, this issue has been viewed as a "national problem", and the Government has paid particular attention to it. The promulgation of the "Educational Revolution", the creation of the Ministry of Science and Higher Education, the Institute for Research and Planning in Science and Education, and the unprecedented increase in the budgetary allocations to higher education attest to this recognition.

To understand the problems thoroughly and to approach them dynamically would be of imperative importance for planners. Cautious approach and the inclination to find specific solutions for specific aspects cannot possibly lead towards solving the problem of higher education as a whole. It is only by injecting the necessary stimulating factors and inserting the mechanism of development into the system that one can hope to face this difficulty. This again cannot be realized unless it is approached with a firm intention of expansion and innovation. What is needed above all is an extensive development-oriented research on the problem and a daring approach in formulating plans and projects. This is actually the light under which the authorities and planners are viewing the problem in Iran.

Brief history of the development of higher education

The first institution of higher education of Iran was founded in the latter half of the 19th century, to train technicians needed for civil and military organizations. This College was called Dar-al-Fonoon (House of Techniques) and at the beginning had indulged in courses such as military techniques, medicine, pharmacology and mineralogy. After the Constitutional Revolution of 1906, the Government initiated certain reforms which gave rise to the need of educated government employees. Thus a few colleges were formed under the sponsorship of various ministries.

In 1934, by bringing the few existing colleges under a uniform system, Teheran University was founded. To train the teaching personnel, certain effective steps, such as providing students with scholarships abroad, were taken.

In 1949 four more universities, in four different cities of Iran, were founded. These universities, however, were formed with no innovation and had Teheran University as their model. At the beginning they were even very much dependant on Teheran University for their teaching personnel. In the following few years, three more universities and quite a number of higher vocational-oriented centres were established.

Real expansion of higher education actually started a decade ago. The number of students increased from 24,500 (academic year 1963-64) to 86,800 (1971-72). Thus the higher education growth has reached 350% in 8 years' time.

At present, the higher education system of Iran comprises 8 universities, 6 independent public institutions of higher education, 57 institutions sponsored by various ministries and 25 private institutions.

Policy-making, governance and financing

The higher education institutions of Iran can be classified under three main categories:

a) Universities and autonomous public institutions;

b) Institutions under the sponsorship of ministries and government organizations;

c) Private institutions.

Universities and autonomous public institutions of higher education have complete administrative and financial independence. Each of these centres has a Board of Trustees acting as a legislative body, ratifying the regulations concerning employment (teaching and research personnel), finance and the budget. The chancellor is also nominated by the Board of Trustees.

Global policy-making and planning in science and education, and the formulation of over-riding criteria are the responsibilities of the Ministry of Science and Higher Education.

The higher education establishments are obliged to observe these policies and criteria. In actual practice this fact does not limit the activities of these institutes and universities, and they enjoy a considerable degree of autonomy and freedom.

According to existing laws, the Ministry of Science and Higher Education is responsible for educational planning at all levels. This Ministry is also in charge of planning for scientific and research activities. The Ministry of Science and Higher Education has delegated its planning responsibilities to the Institute for Research and Planning in Science and Education which was founded in 1968. The Institute is an independent unit, and is supervised by a Board of Trustees similar to those of universities of Iran.

The "Educational Revolution" provides for a global mechanism of evaluation of higher educational establishments of the country. This mechanism deals mainly with such issues as reform and development, the relationship between students and staff and the educational apparatus, and utilization of new management and administrative procedures and techniques.

It should be mentioned that the universities of Iran are faced with important management problems, which they have tried to overcome. For example, the practice of decentralized university administration is gradually being accepted and university faculties and departments are given greater authorities. However, the chancellors of universities still bear a disproportionate part of responsibilities and the process of allocating authorities to lower echelons is very slow. According to government recommendations, a planning unit is gradually being formed in each university. It is hoped that these units will prove to be of considerable help in university planning and result in a more efficient administration.

The teaching and research staff of universities and other autonomous public institutions of higher education are employed under specific regulations adopted by the Board of Trustees of each establishment. These regulations, however, enjoy a considerable amount of harmony owing to the fact that the Minister of Science and Higher Education is a member of all Board of Trustees. These regulations provide, depending on specific qualifications, for four distinct academic positions: professor, associate professor, assistant professor, and instructor. Usually a Ph. D. or its equivalent is required for the first three positions.

The financial allocations to public higher education establishments are provided by three sources:

1. Proper incomes, the greatest portion of which is derived from students' fees. Certain institutions can obtain an extra income through the services they offer. Occasional donations are also listed under proper incomes.
2. Funds allocated from Government budget for current expenditures.
3. Allocations from the provisions of the Five-Year Development Plans. Such allocations are used for capital expenditures, under specific regulations and mechanisms provided by the Plan, and not the Board of Trustees.

The institutions of higher education which are affiliated with ministries and public organizations are, both from educational and administrative points of view, dependent upon their respective organizations. These institutions are, however, obliged to observe the criteria and standards set by the Ministry of Science and Higher Education. Their budgets are provided for in the overall budget of the respective ministries or organizations and is subject to governmental regulations. Needless to say the activities of these institutions are supervised and controlled by the organizations to which they are affiliated. But according to a recent decision, these institutions have been authorized to have a Board of Trustees and enjoy the same privileges mentioned for universities and autonomous institutions.

All private institutions of higher education in Iran are non-profit organizations and observe all due regulations laid down by the Ministry of Science and Higher Education. For example, all these institutions have a Board of Trustees which carries out duties similar to those of independent universities and public institutions. They also observe the educational criteria and standards set by the Ministry of Science and Higher Education.

Courses and enrolment requirements

The education system deals with almost 170 different courses leading to various degrees. The following table shows the degree structure, minimum credit requirements and the duration of each degree:

Degree	Minimum credits and duration
A. A. or A. Sc.	70 credits in 2 years (after secondary school)
B. A. or B. Sc.	140 credits in 4 years (after secondary school)
Engineering	154 credits in 5 years (after secondary school)

Degree	Minimum credits and duration
M. A. or M. Sc.	32 credits in 2 years (after B. A. or B. Sc.)
Ph. D.	not specified (usually after M. A. or M. Sc.)
Doctorate in Medicine, Dentistry, Pharmacology and Veterinary Science	6 or 7 years (after secondary school)

The general requirements for admission are: secondary school diploma or its equivalent for foreign students, and the success of the candidate in entrance examination (concours). Besides, every university, faculty or institution has its own specific conditions, such as the field of study at secondary school, age limit etc., which are announced annually. Those students who have passed the entrance examination and are enrolled in one of the institutions of higher education, are exempted from military service.

Educational structure of universities

Formerly faculties, each being composed of several Chairs, constituted the educational constituencies of the universities. Each academic degree was divided into several academic years with annual examinations, which covered the course structure. This system, however, has undergone profound changes in the past few years.

Faculty Chairs are abolished and educational and research activities are organized within university departments. The notion of credit system is introduced and the academic year is now divided into semesters. Most universities now offer a summer term as well. The faculties, however, still hold a prominent status and play an important part in the educational structure of the university.

A typical university in Iran is normally composed of a few faculties: Faculty of Literature and Humanities, Faculty of Science, Faculty of Medicine, and three or four other faculties which vary from university to university.

Two of the universities are exceptions to this rule: Teheran University, which is the oldest and plays a particular role in the higher education system, is composed of 16 faculties and offers a vast educational spectrum; Aria Mehr Technological University, which is the newest, is concerned solely with scientific and technological disciplines. The comparison of these two universities in itself demonstrates the existing tendancy towards greater specialization at the university level and the emphasis attached to science and technology disciplines.

Student welfare

Recent steps taken in accordance with the spirit of the Charter of Educational Revolution to ensure greater welfare for the student population are of such magnitude that some even consider them as being excessive. For example although the tuition fees are very low in most of the higher education establishments, the Government, with the co-operation of banks, has made special arrangements whereby the students make use of particular loans to pay for their tuitions; that is to say the tuition fees are paid gradually upon the graduation of the students. Apart from this, government and the higher education institutions help the students to find jobs, either in their respective institutions or elsewhere. Thus a considerable number of students work part-time and are paid. Quite a few scholarships are available to students each year. There are well-equipped summer camps which bring the students together and give them the opportunity of many sportive and artistic activities. Student societies, extra-curricular activities and closer and more fruitful relationship between students and university staff have all been activated to stimulate students and ensure their participation in fruitful collective contexts. It appears that all these initiatives will lead to some encouraging results.

Problems of higher education in Iran

The rapid social development of Iran in recent years has put innumerable new demands upon higher education and inevitably creates many problems. On the other hand, the rapid expansion of higher education has also been accompanied by quite a few difficulties. These problems and difficulties can be summarized as follows:

a) The necessity to integrate higher education with national needs through:

   - rapid expansion to meet the increasing scientific, technological and cultural needs and services required by the society;
   - the transformation of the higher education structure in order to achieve greater rationalization and differentiation. The primary goal here is to train the needed skills at various levels through an optimum structure;
   - the overhauling of the educational content in order to elevate the quality of education through incorporation of such factors which would broaden the mental vision of students and their scientific abilities and outlook, and also to adjust their educational intake and skills with ongoing exigencies of a modernized social order.

b) The acceptance of the fact that research is an essential function of higher education, particularly universities, and the insertion of the necessary factors for its realization. The

consolidation of research in the higher education establishments is closely linked to the integration of university research with national needs. Higher education establishments can integrate their activities with national needs only if they actively undertake research in accordance with the above-mentioned needs. One other point demonstrating the importance of research is that the higher education system itself requires scientific capabilities and innovative competences which are largely produced by a well-structured and vigorous research activity.

c) The shortage of qualified teachers and researchers is another key constraint. The intensity of this problem is comprehended, when the vast and ambitious quantitative and qualitative goals of higher education are taken into consideration. The education system of Iran has not yet solved the problem of teacher recruitment in a satisfactory manner. Every year a considerable number of Iranian youth go abroad to study or complete their studies. Upon their return, they constitute the supply of high-level teachers. There is no assurance, however, that this source would be able to continue to meet the need generated by the rapid expansion of higher education envisaged. In recent years, the Government has been very active and rather successful in facilitating the return of Iranian graduates from abroad. It is evident, however, that the solution of this constraint requires more fundamental and daring alternatives.

d) The need for effective university governance and efficient management, and also sound economy in education are other issues which recent developments have brought to attention. Demands for and expectations from higher education on the one hand, and the inevitable scarcity of resources and capabilities on the other, have posed complex problems which can be solved only by extensive planning, rational administration and sound economy.

e) The question of student activism is gradually emerging as a dominant issue of higher education. The main point here is the students' participation in university life. This, viewed from different angles, no doubt acquires different meanings. What is certain, however, is that such participations cannot be separated from students' overall participation in social life. The main difficulty is that the students' activism, their mental and social articulation, and their participation in university life ought to be facilitated in such a way that it would not interfere with the goals and aspirations of a changing society, which adheres to rapid socio-economic development. In other words student activity and its resulting momentum in the university context should have a constructive nature. It should facilitate the socialization of the student strata into the overall priorities

and constraints of the Iranian society, and should discourage unconstructive attitudes.

New visions and future plans

In the past three years a considerable amount of thinking and research has been undertaken. A brief assessment of these thoughts and studies indicates that the responsible authorities have tended to adopt a far-reaching and daring, rather than short-sighted and yielding, attitude towards existing constraints. This does not necessarily suggest an unrealistic approach. Rather, it indicates that instead of being preoccupied with details or trivialities, the authorities and planners are devoting their energies to finding and formulating development-oriented solutions and innovations, which primarily would challenge the existing structures and processes. Furthermore it is important to note that the complexity of problems and constraints has encouraged a tendency to rely increasingly on objective study and systematic planning for cohesive decision-making and development-action.

During the past year a considerable effort has been devoted to the preparation of the Fifth Higher Education Plan which will begin on March 1973. A principal goal of the plan is to at least double the number of students during the next five years. The arrangements envisaged suggest that the actual student population will exceed this minimum. The distribution of students by major disciplines and its evolution are presented in the following table:

	Humanities and social sciences	Applied sciences and technology	Medical sciences
Percentage of students (1973)	35	48	17
Percentage of students (1978)	26	52	22

With regard to qualitative aspects, the following issues are emphasized:

i) elevating the quality of the teaching personnel through the recruitment of new teachers and strengthening its scientific capabilities;

ii) greater reliance on interdisciplinary teaching;

iii) greater emphasis on specialization at the university level. The primary objective here is to orient each existing or new university to particular fields. Such a division of labour would allow for a higher quality of education and a more rational resource utilization at the university level;

iv) through revision of university curriculum and contents to ensure their harmony with regional socio-economic needs and changes;

v) the institutionalization of research as a key component of the university activity and its integration with teaching;

vi) greater emphasis on Persian and foreign language instruction in all institutions of higher learning. This issue has aroused considerable interest in recent years and has resulted in promising initiatives and programmes.

Structional rationalization of higher education and its implications for better quality and greater productivity has received particular attention in the plan. The essential structural innovations of the plan can be summarized in the following manner:

i) Greater differentiation of the higher education pyramid. There is a clear need for a logical balance between academic-oriented university education and a diversified structure of functional and vocational-oriented education. Furthermore, such structure as junior college can be very constructive in this respect. The primary goal is to set up a national higher education apparatus that would correspond to the varying and changing needs throughout the nation.

ii) Regionalization of higher education. The overriding intention here is not only a more coherent geographical distribution of higher education opportunities, but the integration of educational curricula and content with regional needs and exigencies as well.

iii) Education for the traditional sector as against education for the modern sector of the society. It is expected to attach particular importance to those types of higher education that are designed to provide the abilities and skills which are needed for the mobilization and modernization of the rural traditional strata of the society.

In the context of global policies and innovations outlined, some alternatives have been under close study during the past two years. Some of these are briefly given below:

1. A considerable amount of research and development work is being devoted to test the feasibility of a combined media instructional system, similar to the Open University in England, in the context of Iranian society. This significant innovation, if studied thoroughly and applied rationally, could very well help to solve some of the key constraints of higher education in Iran. It could also generate a constructive challenge to the existing conventional structure.

2. Extensive studies are being carried out for the creation of a new university entrusted with such key functions as science education and the training of science teaching specialists, as well as the education of development-oriented skills for regional and rural transformation.

3. The Aria Mehr Technological University has undertaken some promising studies for introducing the notion of interdisciplinary and problem-oriented education. The university which is primarily devoted to science and technology disciplines is planning a new campus in Isfahan which will incorporate these innovations. The success of Aria Mehr University in institutionalizing such notions could very well revitalize the organization of teaching in Iranian universities.

4. Another interesting research, presently in progress, is devoted to the important issue of medical education and its relevance to the national health requirements. A major output of this particular research programme is a promising structural innovation, which inevitably would result in greater differentiation of higher medical education. It clearly illustrates the need for a more functional and vocational-oriented medical education which could be provided at a more massive scale and in a shorter period. This concept has naturally caused some controversies on the part of the more traditional-minded medical scientists. However, the educational planners show considerable optimism about the feasibility and effectiveness of such an innovation.

It is,however, too early to assess the value of such innovations in Iran. Nevertheless, it is believed that ultimately, through conscious resort to such innovative actions, the higher education system of Iran will be infused with necessary stimuli to overcome its existing constraints. The system will thus be flexible and responsive enough to adjust itself to the quantitative and qualitative requirements in a sustained manner.

Table 1. Enrolment by type of Institution from 1969-70 to 1971-72

Type of Institution	1969-70		1970-71		1971-72		Average growth rate 1969-1971
	Total	Female	Total	Female	Total	Female	
Universities	39 444	8 391	41 900	9 520	44 333	10 291	6
Autonomous public institutions	9 296	1 594	9 323	1 691	10 401	1 694	6
Affiliated institutions [1]	8 233	1 790	10 905	2 056	12 568	2 368	23
Private institutions	10 295	5 174	12 580	5 760	19 270	7 303	37
Total	67 268	16 949	74 708	19 027	86 572	21 656	13

Source: Institute for Research and Planning in Science and Education (IRPSE). Statistics of higher education in Iran, 1969-1970, 1970-1971, 1971-1972. Teheran, 1972. (In Persian).

1. Institutions under the sponsorship of government organizations.

Table 2. Enrolment by type of institutions and field of study 1971-72

Type of institution	Sex	Total	Humanities	Education	Fine arts	Law	Social sciences	Natural sciences & mathematics	Engineering	Medical sciences	Agriculture
Universities	MF	44 333	8 113	481	1 637	1 856	7 252	9 162	4 606	8 784	2 442
	F	10 291	2 642	183	298	383	1 647	1 912	189	2 730	307
Autonomous public institutions	MF	10 401	565	1 565	92	-	2 093	1 437	4 258	-	391
	F	1 694	299	304	17	-	463	397	159	-	55
Affiliated institutions[1]	MF	12 315	-	147	1168	-	2 495	176	6 459	1109	761
	F	2 368	-	33	343	-	559	71	397	880	85
Private institutions	MF	19 523	6 533	329	262	123	10 081	974	661	-	560
	F	7 303	4 108	176	191	25	2 406	292	48	-	57
Total	MF	86 572	15 211	2 522	3 159	1 979	21 921	11 749	15 984	9 893	4 154
	F	21 656	7 049	696	849	408	5 075	2 672	793	3 610	504

Source: Institute for Research and Planning in Science and Education (IRPSE). Statistics of higher education in Iran, 1969-1970, 1970-1971, 1971-1972. Teheran, 1972. (In Persian).

1. Institutions under the sponsorship of government organizations.

Table 3. Number of graduates by type of institution from 1968-69 to 1970-71

Type of institution	1968-69	1969-70	1970-71	Average growth rate 1968-1971
Universities	5 053	7 199	7 676	23
Autonomous public institutions	831	1 551	1 583	38
Affiliated institutions[1]	1 507	1 345	3 476	52
Private institutions	1 577	1 674	2 258	19
Total	8 968	11 769	14 993	29

Source: Institute for Research and Planning in Science and Education (IRPSE). Statistics of higher education in Iran, 1969-1970, 1970-1971, 1971-1972. Teheran, 1972. (In Persian).

1. Institutions under the sponsorship of government organizations.

Table 4. Number of graduates by type of institutions and by field of study 1970-71

Type of institution	Sex	Total	Humanities	Education	Fine arts	Law	Social sciences	Natural sciences & mathematics	Engineering	Medical sciences	Agriculture
Universities	MF	7 676	1 670	104	227	340	1 579	1 301	571	1 401	483
	F	1 928	505	42	46	46	341	279	8	620	41
Autonomous public institutions	MF	1 583	-	434	38	-	286	220	599	-	6
	F	344	-	83	36	-	55	103	67	-	-
Affiliated institutions [1]	MF	3 476	-	64	249	-	636	43	1 941	323	220
	F	674	-	9	63	-	166	24	125	281	6
Private institutions	MF	2 258	804	32	62	-	1 132	153	18	-	57
	F	1 050	575	22	31	-	312	107	-	-	3
Total	MF	14 993	2 474	634	576	340	3 633	1 717	3 129	1 724	766
	F	3 996	1 080	156	176	46	874	513	200	901	50

Source: Institute for Research and Planning in Science and Education (IRPSE). Statistics of higher education in Iran, 1969-1970, 1970-1971, 1971-1972. Tehe:an, 1972. (In Persian).

1. Institutions under the sponsorship of government organizations.

Table 5. Number of teaching staff by type of institution from 1969-70 to 1971-72

Type of institution	1969-70		1970-71		1971-72	
	Full-time	Part-time	Full-time	Part-time	Full-time	Part-time
Universities	2 116	1 519	2 200	1 628	2 744	1 642
Autonomous public institutions	217	366	262	294	380	263
Affiliated institutions[1]	305	1 002	202	1 175	233	1 320
Private institutions	135	443	216	497	282	791
Total	2 773	3 330	2 880	3 594	3 639	4 016

Source: Institute for Research and Planning in Science and Education (IRPSE), Statistics of higher education in Iran, 1969-1970, 1970-1971, 1971-1972. Teheran, 1972. (In Persian).

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HIGHER EDUCATION IN JAPAN

by Hiroshi Kida

The year 1972 is the centenary of the establishment of the modern education system in Japan. From the outset of the Meiji Restoration, the Emperor's régime gave a very high priority to education. While it made special efforts for setting up primary schools all over the country in order to enable all children to receive primary education, it also created a number of institutions of higher education necessary for turning out the leaders of the nation. In 1877, when the University of Tokyo came into existence by amalgamating two existing colleges, there were already 70 vocational and professional colleges in operation for the purpose of producing physicians and other professional personnel. There were also 92 normal schools to train primary school teachers, and 6 higher normal schools to train secondary school teachers.

World-wide attention is now being drawn to the fact that Japan has made consistent efforts for the expansion and improvement of education during the last 100 years and, by virtue of it, has improved the quality of the nation and achieved the present development of the country. To summarize the main trends of the educational development during the past 100 years, it may be said that, in the early years, the national efforts were concentrated on the completion of primary education and the creation of certain institutions of higher education, then on the expansion and improvement of secondary education, and lastly on the expansion and diversification of higher education, which largely corresponded to the stages of development of the nation.

Present education system

The present education system in Japan is the 6-3-3-4 system. All the children who have reached the age of six are enrolled in a six-year primary school. As more than half of these children have received one or two year pre-school education at kindergartens, it is not correct to say that education begins with the primary level. Up to the completion of three years of lower secondary education, or up to the age of 15, education is compulsory. To-day, more than 80% of the lower secondary school graduates proceed to upper secondary schools of their own will.

About one-third of the upper secondary school graduates enter institutions of higher education. According to the latest statistics, 25% of the university-age population are receiving higher education. Institutions of higher education consist of universities, junior colleges, technical colleges and graduate schools. Those who have completed twelve-year education at primary and secondary schools are qualified for entering universities, which offer four-year education (in the case of medicine and dentistry, six-year education). Junior colleges, which offer two-year or three-year education, require the same qualification as universities for admission. Technical colleges receive those who have completed the nine-year primary and lower secondary education and provide five-year education.

Technical colleges, which are at present limited to such disciplines as engineering and mercantile marine, are intended to provide a five-year education to produce well-qualified middle-level technicians. They came into existence in 1962 and at present the number of such technical colleges is 63, which constitutes a comparatively small portion in higher education.

Graduate schools receive those who have completed a university course. The Master's degree course covers two years and the Doctorate degree course, five years. In the case of medicine and dentistry, the Master's degree course is not offered, but the Doctorate degree course of four years' duration is offered. In principle, graduate schools are established in association with the existing universities which enjoy a high level of academic and material standards. At present, there is no graduate school in Japan which operates independently from a university.

Institutions of higher education

Institutions of higher education may be established either by the national and public (prefectural and municipal) authorities or the private bodies called school juridical persons. The latter should be public service corporations whose aim is to establish educational institutions under the provisions of the School Education Law. The national institutions of higher education are established by law, whereas the public and private ones are established with the prior approval of the Minister of Education.

Needless to say, the national and public institutions are maintained by the national treasury and the public fund of the respective local public bodies, but they collect nominal tuition fees from the students. The private institutions established by school juridical persons are in principle financed by its own fund, donations and other incomes as well as the tuitions and other charges collected from the students. The tuition fees of the private institutions are considerably higher than those of the national and public ones.

As of 1971, there are 389 universities, 486 junior colleges, 63 technical colleges, and 188 graduate schools attached to universities. Of 389 universities, 75 are national, 33 are public, and 281 are private. Of 486 junior colleges, 23 are national, 43 are public, and 420 are private. As may be seen from these figures, a greater part of Japanese universities and junior colleges are private establishments. On the other hand, almost all of the existing technical colleges are national establishments. Such an imbalanced proportion of the number of national, public and private establishments is evidently reflected on the number of students enrolled. The total number of university students is about 1,400,000 and that of junior college students 270,000. Of these figures, the number of students enrolled in private universities is 1,070,000 and that of students enrolled in private junior colleges 240,000. The number of students enrolled in graduate schools is about 40,000, of which the majority are in the national establishments. In other words, higher education in this country is characterized, except for graduate schools, by the predominance of private establishments both in number and enrolment. This fact presents a big challenge in the policy and measures to be taken by the Government towards private institutions of higher education.

At present Japanese universities receive some 4,600 foreign students, of which 83% are from the Asian region. The Japanese Government fellowships, which are being offered to some 700 foreign students, are increasing annually in number.

Characteristics of higher education in Japan

The first characteristic of higher education in Japan is the great predominance of private establishments, as mentioned in the preceding paragraphs. The second characteristic is the availability of higher education in almost all the specialized areas of study. Institutions of higher education assume the responsibility of various professional and technical education and training.

Japanese universities are not only giving advanced general education and conducting academic research in various disciplines, but they are also made responsible for teacher training, technical education and vocational education. Librarians, navigation personnel, fishery technicians, telecommunication technicians, medical treatment personnel, nutricians, etc. are all trained by universities and other institutions of higher education. Many of the universities have specialized schools or departments to train these technical personnel.

Until 1947, when the present system came into existence, the institutions of higher education in this country was rather of the European type. In 1942, the normal schools were considered as institutions of secondary education, and the universities at that time did not offer so many branches of technical education as they do to-day. However, such practical disciplines as engineering have had an important place in higher education from the early years of its existence. It can be said

that such a practical element of higher education came into full bloom when the new education system was introduced in 1947.

The third characteristic, which deserves special attention, is the wide strata of society from which students come. In higher education in European countries, the students from the families of learned professions and executive positions make up a greater part of higher education enrolment, while those from the working class are small in proportion. Therefore, democratization of higher education has become a major problem in these countries. In Japan, the distribution of the occupations of the families from which higher education students come is practically the same as that of the occupations of the adult males between 40 and 50 years of age. This means that, in higher education in Japan, equal opportunity of education is offered to all boys and girls without distinction of the social standing and occupational status of their families. No matter where they come from, those who have ability are given equal access to higher education and can attain the position of leadership in the society. This principle has been fundamental to the operation of the Japanese education system ever since its inception in 1872. It may be said that the idea has now been realized to the full.

Historically speaking, higher education in this country played an important role in changing the feudal society established in the pre-Meiji Era with the hierarchical distinction of the four social classes of warriors, farmers, manufacturers and merchants, to the present society where what counts most is the educational background and intellectual ability. Until 1947, however, there was a discrimination by sex in the admission into higher education. There were also several different streams in secondary and higher education, which were not interchangeable. In this sense the equal opportunity of education was not fully guaranteed under the education system until 1947. The present system is a great improvement in this respect as well.

The fourth characteristic is the severe competition for entering higher education, which is closely related with the third characteristic mentioned above. Under the system where anybody of talent has the possibility of studying at a university and consequently winning a leadership position in the society, it is natural that the young people should want to enter universities, particularly the famous ones. The result is a great rush of applicants to a limited number of universities of long tradition and high reputation.

In principle, graduates from upper secondary schools are qualified for admission to universities, but in practice they cannot enter the universities of their choice without sitting for competitive entrance examinations. As mentioned earlier, a very large number of the young people now attend and graduate from upper secondary schools. This tends to aggravate the severe competition in the university entrance examinations. Some of those who have failed in the examinations for admissions to the particular universities where they are so eager to enter will not go to other universities but pursue a special preparatory

study in order to try again for the same universities in the following year. These waiting students, who are called ronin after the name of unemployed samurai in the feudal age, now occupy some 20% of the university applicants every year, and present a serious problem.

Challenges of higher education

The Central Education Council, an advisory organ to the Minister of Education, made a careful review and examination of the education system as a whole under the chairmanship of Dr. T. Morito, and made public in June 1971 its final report on the basic measures to be taken for an educational reform. This report contains a section dealing with the reform of higher education, where all the problems are pointed out and the measures for improvement are indicated.

Firstly, those enrolled in institutions of higher education to-day constitute a high percentage of 25 of the university-age population. According to the report, this percentage will continue to increase and reach 47 in 1980. It is a tremendous challenge to find ways to meet this quick-paced trend towards the democratization of higher education. This expansion has an immediate bearing upon all the problems of higher education, such as the distribution and location of institutions, content and methods of education, division and co-ordination of disciplines, administration and governance, etc. Positive measures to deal with these problems should be taken with a long-range prospect for future development. Secondly, as institutions of higher education continue to expand, their academic standard should be improved and elevated. In particular, the improvement of the graduate schools is a problem of immediate importance. Work has already started in this direction by setting higher standards for the establishment of graduate schools. As to the functions of graduate schools, consideration should be made for their role in the education and training of professional personnel of a more advanced level. The Central Education Council also pointed out the importance of this function in its recommendations to the Minister of Education. In addition, particular care should be taken so that universities may fulfil their role as an integral part of a life-long education system by providing an opportunity for the people already working in the society to be re-educated.

Thirdly, the problems relating to an improvement of the educational content are the treatment of general education and the balance between general education and specialized education. Those problems are closely related to the organization of the teaching staff. It is a widely-held opinion that an innovation should be introduced in the organization of the university staff so as to fulfil both the educational function and the research function.

From this point of view, the Tsukuba University (provisional name) is going to be established soon with a number of innovations after a

drastic reconsideration of the previous set-up of faculties and departments of the traditional disciplines.

Besides, preparation is in progress for the establishment of a university on the air in order to meet the challenge of the democratization of higher education mentioned above. The year of its opening is not yet fixed. However, as a critical study is now being made vigorously among the university people concerned, a university with new educational content and method will come into existence before long.

Fourthly, the trend towards the democratization of higher education not only entails an ever-increasing number of universities but also a larger enrolment in each university. There are already 34 universities which accommodate more than 10,000 students. This gives rise to student problems to be tackled with as a community problem. What place and status should be given to the enlarged student body in the university? The traditional treatment of students merely as those to be educated and to pursue studies by themselves will not suffice any longer.

The fifth challenge is to devise a new pattern of efficient university management, which includes how to deal with the student problem as well. A number of faculties, a large student body and various research institutes usually constitute a university. The universities with medical schools operate big university hospitals. Some universities possess a vast land and forest for educational and research purposes. Certain universities are working hard to put a man-made satellite into orbit. A present-day university has become a big complex of education and scientific research. It is necessary to find a new pattern of management and governance in order to operate such a university effectively.

The next problem is finance, which is closely related to management. It has become extremely difficult for private universities in particular to cover the annual increasing expenditure by recourse to the repeated raise of tuition fees. The need was urgently felt for the National Treasury to subsidize the recurrent expenditure of private universities as well. For this purpose, the Japan Private Education Promotion Foundation was created, and in 1972 it provided private universities and other private educational institutions with the subsidies amounting to some 30 billion yen. The Foundation also offers low-interest loans to assist private universities in financing the capital expenditure. However, strong voices are heard for more substantial assistance to be provided by the Government to solve the financial difficulty of private universities, whose total expenditure is estimated at some 300 billion yen.

Another financial problem is the expansion of the scholarship programme. At present, about 10% of the university students enjoy the benefit of scholarship loans without interest. Yet quite a few people are obliged to give up higher education for financial reasons. The need for an increase both in the number of beneficiaries and in the amount of scholarships is emphasized.

Among other problems facing institutions of higher education in Japan is that of internationalization, which demands the acceptance of more foreign students as well as more active international co-operation in education and research. There is also a great demand for an expansion of the training of teachers, physicians and computer science personnel, both in quantity and quality.

As indicated in the preceding paragraphs, the problems with which higher education is confronted at present are diverse and numerous. However, since it is through the improvement of higher education that the intellectual activities of the nation can be advanced and the social welfare in its true sense can be realized, the expansion and improvement of higher education should be the most important work in the future effort of the educational reform in this country.

Statistical data

Table 1. Enrolment in universities, junior colleges and technical colleges 1967-1971

Year	Universities		Junior colleges		Technical colleges	
	Total	Female	Total	Female	Total	Female
1967	1 160 425	203 220	234 748	190 794	33 998	582
1968	1 270 189	228 298	255 262	209 364	38 365	610
1969	1 354 827	243 968	263 362	216 601	41 637	633
1970	1 406 521	252 745	263 219	217 668	44 314	673
1971	1 468 538	268 646	275 256	228 654	46 707	649

Table 2. Number of full-time teaching staff 1967-1971

Year	Universities	Junior colleges	Technical colleges
1967	66 738	13 449	2 506
1968	71 786	14 829	2 855
1969	74 706	15 445	3 081
1970	76 275	15 320	3 245
1971	78 848	14 911	3 349

Table 3. Number of institutions 1967-1971

Year	Universities	Junior colleges	Technical colleges
1967	369	451	54
1968	377	468	60
1969	379	473	60
1970	382	479	60
1971	389	486	63

Table 4. Number of graduates by field of study

Year	Humanities	Law, politics economics & commerce	Science	Engineering	Agriculture	Medicine, dentistry, pharmacy & nursing	Merchant marine	Home economics	Teacher training	Fine arts	Others	Total
					Universities							
1967	28 683	78 573	5 569	37 263	8 400	9 408	285	3 003	12 826	3 408	-	187 418
1968	23 673	86 560	6 033	38 352	8 047	8 388	276	3 140	16 264	3 730	165	194 628
1969	27 720	95 627	6 838	43 414	8 478	9 353	292	3 970	17 529	4 269	315	217 805
1970	32 266	103 657	7 209	48 481	9 072	10 141	309	5 260	18 993	5 135	398	240 921
1971	35 955	117 926	7 935	55 850	11 135	11 313	308	5 470	20 531	6 107	419	272 949
					Junior colleges							
1967	17 228	8 565	103	5 414	900	118[1]		32 471	7 651	2 245	-	74 695
1968	19 720	11 269	75	6 459	1 131	1 222[1]		41 055	13 045	3 851	2 339	100 166
1969	20 973	11 829	73	7 385	1 281	1 890[1]		43 497	17 165	4 812	2 186	111 091
1970	22 327	11 421	78	6 596	1 476	2 208[1]		43 544	19 322	5 602	2 229	114 803
1971	23 839	11 841	107	7 964	1 526	2 546[1]		41 507	20 220	5 739	2 223	117 512

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HIGHER EDUCATION IN THE REPUBLIC OF KOREA

by Jongchol Kim

Historical development

Modern higher education in Korea started around the turn of the century, of which there were three basic streams: one introduced by Western missionaries, another initiated by Koreans inspired by nationalism, and the third sponsored by government authorities. Under the Japanese colonial rule higher education was greatly repressed. The opportunity for higher education was limited; control was stringent; and private institutions were oppressed.

At the time of the Korean Liberation in 1945 there were 19 institutions of higher education in the south with a total of 7,819 students. Under the United States Military Government (1945-48), higher education was reorganized and expanded under completely new political and socio-cultural conditions of the time. Colleges and universities were made into four-year institutions. The semester plan for the academic year was introduced. New institutions were brought into existence either through reorganization or establishment. Enrolments grew rapidly.

When the Republic of Korea established a government in 1948, there were four universities (Seoul National, Korea, Ewha and Chosun Christian), 23 independent colleges (three national, four public and 16 private), four junior colleges (all private) and 11 miscellaneous schools of collegiate standing, with 1,265 faculty members and an enrolment of 24,000. Under the First Republic, higher education continued its growth. Even during the Korean War (1950-53), despite the initial setback of the almost irrevocable damages inflicted, it was continued in refugee schools and "Wartime Union Colleges." During the wartime and with cessation of hostilities, many of the United Nations Agencies as well as the United States Government and civilian organizations came to help reconstruct Korean higher education. Meanwhile the trend for expansion continued, although it was somewhat curved, beginning with the enactment of the Presidential Decree on the Establishment of Colleges and University Standards in 1955.

The Student Revolution of 1960 was of particular significance in that it brought forth a change to realize the importance of students and

the need for their guidance. Under the Military Government (1961 - 63), a series of radical reforms were attempted, many of which, including the so-called re-arrangement of colleges and universities, were nullified by the end of the military rule. The two-year junior colleges of education for elementary teacher training were started in 1962, and the five-year junior vocational colleges combining high school and junior college courses were introduced in 1963, both of which have become lasting features. In more recent years, increasing efforts have been made both by the government authorities and the individual institutions concerned to place greater emphasis on long-range planning and improvement of the educational quality. Various reform measures have emerged. Higher education in the Republic of Korea is now in a state of flux, rapidly moving towards change and reform.

Organization, control and support

Higher education in Korea is organized in accordance with the provisions of the Education Law of 1949 and the Presidential and Ministerial Decrees based on it. Higher educational institutions are composed of five different types: a) colleges and universities with four-year undergraduate programmes, with the exception of six-year medical colleges; b) two-year junior colleges; c) two-year junior colleges of education for elementary teacher training; d) five-year junior vocational colleges admitting junior high school graduates and two-year junior vocational colleges; and e) miscellaneous schools of collegiate standing with two to four-years' duration of study, which include nurses' training schools, seminaries, etc. Out of the 170 existing higher educational institutions, 113 are private. Most institutions are co-educational, but some are exclusively for women.

All higher educational institutions, national, public and private, are subject to control and supervision by the Ministry of Education, although a considerable degree of autonomy is guaranteed. Control is exercised with regard to such matters as student quotas, standards of establishment in terms of personnel and facilities, qualifications of the faculty, degree requirements, and curricular requirements in a few general education courses and military training. Presidents as well as members of the Boards of Trustees of the private institutions are to be authorized by the Ministry.

Six national universities and other national institutions of higher education including 16 junior colleges of education are supported by the central government. A municipal college is supported by Seoul City. Private institutions are maintained by private school corporates authorized in accordance with the Private School Law of 1963. Around 10 % of the Ministry of Education's budget, which in turn occupies around 19 % of the national budget, is allocated for higher education. Private institutions are generally dependent upon student tuition for their financing.

According to a nation-wide higher education survey in 1966, tuition and fees constituted 45% of national and public higher education sources of revenue, and 70% of private higher education.

Faculty and students

The Educational Public Officials Law of 1953 provides for the minimum legal qualifications of faculties in higher education. Provisions on faculty qualifications are applied to private institutions through the Private School Law. The basic minimum standards are set in terms of education and experience, e.g. 10 years of research and teaching for a full professor. The actual standards, which exceed the legal standards, vary widely from institution to institution. Some universities may regard the doctorate degree as a basic minimum qualification for instructorship, while others may barely satisfy the legal standards.

As of 1971, the total number of instructional staff was 10,170, of which 8,071 were in colleges and universities. The college and university faculty was composed of 27.1% full professors, 15.5% associate professors, 20.7% assistant professors, 19.4% full-time instructors and 17.3% miscellaneous category. Of the total, 19.4% had doctorate degrees and 38.6% had master's degrees. According to the survey previously conducted, the average Korean professor in 1966 was 41.5 years of age and had 13.7 years of experience. He has to retire at 65. On retirement he is generally entitled to a substantial retirement plan and/or annuity plan provided through a joint contributory system. The salary schedules are standardized for national institutions; there are wide variations among private institutions. The basic instructional load per week is around 10 hours. The student-staff ratio in colleges and universities is 19.3 on the average.

Students are admitted to all higher educational institutions on the basis of the annually administered national qualification examination and the entrance examinations given by individual institutions, except for junior vocational colleges and the miscellaneous schools which are exempted from the national qualification examination and administer their own entrance examinations. Even in colleges and universities, physical education and art majors are exempted from the national qualification examination, which was introduced in 1969. The national examination is given to test most subjects taught in senior high schools, while entrance examinations by individual institutions vary widely in terms of both quality and quantity. Quotas by institutions and by departments are authorized by the administrative authorities and students are generally admitted to a department on the basis of their performance on the entrance examination. Transfer from one department to another is allowed, but it is limited.

As of 1971, there were 199,186 students enrolled in all higher educational institutions. Roughly 8.39% of the 19-22 age-group were

enrolled in higher education. Of these, 162,669 students were enrolled in degree-granting colleges and universities, which constituted 6.75% of the age-group. Women students occupied a quarter of the total enrolment, and 69% of the students were enrolled in private institutions. The majority of the students attended natural science courses. In 1971, 57% of the graduates from national/public colleges and universities and 52% from the private institutions were employed, showing a substantial decrease from the figures in the previous year, which had indicated an all-time record of 82% and 66% respectively. Graduates of junior colleges of education are all employed as elementary teachers, and almost all those of the nurses' training institutions are also employed.

Students are engaged in a variety of extra-curricular activities: academic, religious, recreational and social. The 1966 national survey indicated that 44.5% of the respondents were affiliated to one or more clubs and small groups. Student councils are organized in all institutions, student self-government being encouraged. Student demonstrations in recent years, however, have brought forth more stringent control and disciplinary actions particularly since 1971. In most colleges and universities guidance centres have been organized, but they are generally understaffed with poorly qualified personnel. According to the 1966 national survey, 24.1% of the students expressed positive dissatisfaction with college life.

The programmes

The academic year starts on 1 March and ends in the following February. Each academic year is divided into two semesters, with long summer and winter vacations. All higher educational institutions must be open for a minimum of 210 school days. In a four-year degree-granting institution, 160 credit hours requiring at least eight semesters' work will have to be earned for the B.A. or B.Sc. Generally two additional years are required for the Master's degree and five to six years for the Doctorate degree. In 1971, there were 71 bachelor degree-granting institutions with 1,224 departments; 37 general academic-type graduate schools with 532 departments for the master's programme and 289 departments for the doctoral programme; 37 other specialized-type graduate schools, which offer specialized programmes in such fields as public administration, industrial development, social development, education, etc., at the master's level. The doctoral programmes, however, are quite inadequate in general. Between 1948 and 1971 only 3,831 received the Ph. D. degree.

The typical undergraduate curriculum is generally organized into three types of courses: general education courses, specialization courses and electives. The distribution of these courses within the total credit hours varies widely among different institutions. In the 1966 national survey the average percentage distribution was 30.6%, 51.3%, and 18.1% respectively.

The instructional method in general is lecture-centred. The experimentation and laboratory work are the general practice in natural science fields, which is limited by poor facilities and equipment. The academic standard also suffers in many institutions because of poor library facilities, which also limits research work.

Emerging practices

In recent years higher education in the Republic of Korea has been under increasing pressures, both internal and external, to re-examine its organization, programmes, products, etc. Some attempts at reform in the early 1960s generally failed. Mere quantitative growth, however, was greatly discouraged and finally checked through such measures as the national qualification examination and registration of college and university entrants with the Ministry of Education. More recently a series of measures to raise the quality of college and university programmes and thereby to improve the internal efficiency and external productivity of higher education have been introduced, some of which may be briefly examined in the following paragraphs:

1. The planning function is being strengthened. On the governmental side, a 15-year long-range comprehensive educational plan (1972-86) was drawn up between 1968 and 1970, which places strong emphasis on the improvement of higher education. Many individual institutions, both national and private, have set up such bodies as the planning bureau and college or university development councils. A few institutions, such as Seoul National University and Ewha University, have developed long-range master plans. In the case of Seoul National University the proposed development plan contains elements of complete reorganization of constituent colleges and professional schools as well as the managerial system, anticipating its moving to a new campus under construction. When completed by around 1975, it will be a completely reorganized and integrated university.

2. Faculty development is increasingly stressed. In many institutions greater care is being exercised in faculty recruitment. Better institutions, such as Seoul National University, Korea University and Yonsei University, will no longer recruit any new faculty member with less than a doctorate degree from an authentic institution of higher learning. Promotion is no longer automatic in these and many other institutions, and achievement in terms of research and in some cases teaching ability is being evaluated. Faculty seminars and other means of in-service training have been organized; foreign studies and exchange programmes have been promoted. Incentive systems, such as retirement plans and fringe benefits as well as salaries, have been systematically improved. Faculty participation in policy-making is encouraged more through organization of the faculty concern.

3. The research function in colleges and universities is being stressed. Since 1963 the Ministry of Education has been allocating research grants to individual professors, research institutes in colleges and universities and for specific joint projects. The grants financed from the national budget have been increased constantly, almost doubling the amount each year, although it is still inadequate in terms of needs. Seoul National University receives about a quarter of the total grant. Individual institutions are also attempting to increase their budget for research from their own resources. Seoul National University and few other institutions have inaugurated the system of research professorship. Efforts are also being made to improve research facilities including libraries.

4. Inter-university co-operation, hitherto scarcely recognized, is now emerging. Korea, Yonsei and Ewha Universities have recently been engaged in an inter-university development research, as a result of which various types of consortium activities have been developed. More recently Suk-myung and Sugang Universities also have joined efforts. A somewhat spectacular example of the consortium activity is illustrated by the fact that two male students of Yonsei University are taking courses offered at the Graduate School of Ewha Women's University in 1972, the first event in the 87-year history of the university which is exclusively for women. These leading private universities are also making announcements of their entrance examinations jointly to save advertisement fees and for other reasons. Consortium activities also are extended to joint researches; exchange of professors is now being discussed and may materialize in the near future.

5. Korea Radio and Correspondence Junior College, attached to Seoul National University, was inaugurated in 1972. It will accommodate 13,000 students in such areas as elementary education, public administration, business administration, agriculture and home economics. Instruction will be given over the radio and through correspondence courses. Some national universities and junior colleges of education in the provinces throughout the country have been designated as co-operating institutions, where direct instruction will be provided during vacations. These undertakings are clearly opening up a new frontier in Korean higher education.

Problems and needs

There are many problems facing Korean higher education today, some of which may be enumerated as follows:

1. Lack of clear-cut objectives and consequently inadequacy of the programmes are the major weaknesses. Many institutions of higher education have been established, many departments have been organized, and many courses have been multiplied without clear-cut

objectives in terms of the needs of the society and concrete outcomes of education. Many institutions are primarily interested in the transmission of knowledge and skills, being little aware of the fact that without research, instruction can hardly be effective; much less the fact that service to the community can be the legitimate function of higher education as well. Thus many institutions overlap in their programmes and few institutions have organized service activities.

2. Lack of critical inquiry into the educational process is a serious problem in Korean higher education. Over-emphasis upon the lecture method, lack of instructional materials and library resources, the long tradition placing emphasis on rote memorization as revealed in the examination system, etc., may be the causes. The examination system may be at the heart of all factors. New strategy must be developed and new methods explored in order to promote critical inquiry. Faculty development and improvement of instructional practices as well as the examination system are most urgently needed.

3. Balance between control and autonomy is essential in an effort to improve higher education in Korea. The bureaucratic control has proved to be rather ineffective and there is an increasing demand for greater institutional autonomy as well as for more rational control exercised through professional judgements. Such organizations as the University Council and the Board of Trustees for national higher education have been suggested. Similarly, private institutions need greater autonomy in regard to the presidency and faculty. The existing Presidential Decree on the Establishment of College and University Standards seems to be in need of re-examination; new devices for accreditation and evaluation of quality may have to be developed.

4. Graduate education urgently needs to be strengthened and improved. Many graduate school programmes are quite inadequate. Research and instruction must be more closely linked at this level. Area studies may need to be developed. Closer inter-university co-operation and co-operation between university and industry need to be explored. Both facilities and faculty need to be strengthened. Many authorized advanced programmes may need to be reorganized, integrated or eliminated on the basis of re-evaluation of the programmes. Financial investment needs to be substantially increased.

5. The overlapping functions of the junior colleges and junior vocational colleges need to be re-examined. The major difference between the junior colleges and the two-year junior vocational colleges is that the national qualification examination is required only for the former. Both junior colleges and junior vocational colleges have not been very successful, attracting less and less students, while there

is an increasing need for manpower at the technician level. Functions of the junior colleges may need to be extended to serve as a lower stage for senior colleges as well as for the training of technicians. Programmes must be made more adequate and incentives must be strengthened.

Statistical data

Table 1. Enrolment at the third level 1967-1971

Year	Total	National and public	Private
1967	156 173	39 597	116 576
1968	162 145	46 071	116 074
1969	173 380	51 542	121 838
1970	187 029	57 849	129 180
1971	199 186	62 670	136 516

Table 2. Number of teaching staff 1967-1971

Year	Total	National and public	Private
1967	7 785	3 200	4 585
1968	8 888	3 550	5 338
1969	9 704	3 849	5 855
1970	10 435	4 136	6 299
1971	10 924	4 524	6 400

Table 3. Number of institutions 1967-1971

Year	Total	National and public	Private
1967	162	53	109
1968	166	53	113
1969	171	57	114
1970	168	57	111
1971	170	57	113

Table 4. Number of graduates by fields of study 1967-1971

Year	Total	Linguistic and literature	Arts	Humanities	Social science	Education	Natural science	Engineering	Medical and pharmacy	Agriculture and forestry	Fishery and marine	Teacher training	Other
1967	35 719	2 655	1 610	1 857	10 504	453	2 842	5 255	2 995	2 326	443	4 779	-
1968	40 961	3 100	1 945	2 091	11 169	557	3 357	6 779	3 590	2 634	503	5 236	-
1969	36 858	2 334	1 837	1 508	9 642	439	2 960	5 456	3 088	2 856	982	5 756	-
1970	38 774	2 500	1 615	1 404	9 122	347	3 093	6 833	3 450	2 904	803	6 703	-
1971	37 449	2 528	1 671	1 258	9 207	389	2 750	3 698	3 967	3 473	622	7 833	53

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HIGHER EDUCATION IN MALAYSIA

by Ahmad Ibrahim

Historical background

The idea of an institution of higher learning in these territories dated back to 1 April 1823 when Sir Stamford Raffles proposed the establishment of a College which would provide educational and research facilities - a proposal which gave rise to one of Singapore's oldest secondary schools, Raffles Institution. There was an attempt in 1889 to establish a training course for assistant surgeons. The first successful venture in higher education in the area, following a public appeal for funds, was the foundation of the Straits Settlements and Federated Malay States Government Medical School, which was established in Singapore in July 1905. In 1912, the name was changed to the King Edward VII Medical School, and in 1916 its Licence in Medicine and Surgery was recognized by the General Medical Council of Great Britain. In 1921, substantial academic expansion took place and the name was further changed to King Edward VII College of Medicine.

The next institution of higher education to be established was Raffles College. A suggestion was made in 1918 that the most suitable memorial of the centenary of the foundation of Singapore would be the establishment of an institution of higher learning to be known as Raffles College. A hope was also expressed that the College would form the nucleus of a future university. A large fund was established by public subscription and the College was opened in 1929. Its early years were made difficult by a major economic depression and by 1934-35 it had only 80 students but from then on a steady growth took place.

Shortly after the end of the war a Commission was established under the Chairmanship of Sir Alexander Carr-Saunders to enquire into and make recommendations concerning university education in Malaya. The Commission arrived in March 1947 and after an intensive study of the country's needs and of the existing facilities for higher education recommended that the King Edward VII College of Medicine and Raffles College be amalgamated to form a University of Malaya and that the University be moved as soon as possible to new buildings to be erected in the State of Johore. The Commissioner's Report was received with

enthusiasm in Malaya and after full discussions the legislatures of the Federation of Malaya and of Singapore enacted an Ordinance bringing the University into existence. It was later agreed that by 1956 the University should develop in Kuala Lumpur as well as in Singapore.

In 1957, a Commission of Enquiry under the chairmanship of Sir Robert Aitken, Vice-Chancellor of Birmingham University, was set up by the Governments of the Federation and of Singapore at the request of the University in the light of the experience and rapid expansion of the last seven years and of the prospective expansion in the near future, including the plan for developing the University in Kuala Lumpur, and to make recommendations.

Arising from the Commission's Report and resulting from the recommendation of a Joint Constitutional Committee appointed by the two Governments, legislation was passed in November 1958 providing for the continuance of the University of Malaya as a single university and the establishment of two largely autonomous divisions of equal status, one in each territory. This legislation came into effect on 15 January 1959. Under these arrangements the University of Malaya in Kuala Lumpur and the University of Malaya in Singapore each had a Principal, a Divisional Council and a Divisional Senate. The University of Malaya as a whole was administered by the Vice-Chancellor and the Central Council. Medicine (including dentistry and pharmacy) and law were taught in Singapore. Engineering, transferred since July 1958, was taught in Kuala Lumpur. Arts and science were taught in both Divisions, but such subjects as Malay studies, Indian studies and geology were available in the first instance only in Kuala Lumpur. Likewise, philosophy, social studies and Chinese language and literature were available only in Singapore. The School of Education remained in Singapore. The development of the University in Kuala Lumpur was rapid during the three years of its existence from 1959 to 1961. Student numbers more than trebled, from 320 in January 1959 to 1,010 in December 1961. The student population was 3,603 in 1966, 4,560 in 1967, 5,566 in 1968, 6,672 in 1969, 7,777 in 1970 and 8,544 in 1971.

The constitutional development which resulted in the establishment of the University of Malaya as a separate, autonomous, national university of the Federation of Malaya began in 1960 when the Government of the Federation of Malaya indicated its intention that the Kuala Lumpur Division of the University of Malaya should become the national university of the Federation. Likewise, the Singapore Government indicated its intention that the Singapore Division should become the national university of Singapore. Steps were taken in 1961 to achieve the establishment of these two separate national universities and the necessary legislation was passed in October 1961 in the Parliament of the Federation of Malaya and in December 1961 in the Legislative Assembly of the State of Singapore. This legislation came into effect on 1 January 1962, thereby founding the national University of Malaya.

The University of Malaya has at present 9 faculties: Faculties of Agriculture, Arts, Economics and Administration, Education, Engineering, Medicine, Science, Dentistry and Law.

Beside the University of Malaya, there are four other universities as follows:

1. University of Science, Penang, which was established in 1969. It offers courses in natural sciences, social sciences and humanities, education, pharmaceutical sciences, and will eventually offer courses in applied sciences, building science and technology. The academic programme of the University represents a break away from the traditional concept of rigid departmental structures. In place of departments and faculties, a number of broadly-based Schools of Studies have been established. Within each School, the policy is to combine subjects and to organize courses in such a manner that a degree of traditional specialization in a chosen subject is possible, whilst at the same time the student is required to become acquainted with other but related fields of study. While core courses will be taught relating to basic principles and research methods in each of the disciplines, there will also be a conscious orientation towards vital graduate manpower needs of the nation in the manufacturing industry, agriculture, social and welfare services, health and education. All students read certain compulsory courses. Regardless of their specialist inclinations, they are required to read Bahasa Malaysia, mathematics or quantitative methods for three years.

2. University Kebangsaan Malaysia, which was established in 1970 incorporating the Muslim College, the earliest institution of higher Islamic education in Malaysia. The University has three faculties: Arts, Science and Islamic Studies. It aims at providing a liberal and balanced kind of education. Although the national language, Bahasa Malaysia, is the medium of instruction, English is compulsory to all students from the first to the third year. All students in the Faculties of Arts and Islamic Studies are required to take a course in general science in the first and second year. Students in the Faculty of Science must take one unit of courses offered by the Faculty of Arts in the first and second year. Students from the Faculty of Islamic Studies are also required to take two units of courses offered by the Faculty of Arts in the first year and three units in the second and third year.

3. University Pertanian Malaysia, which was established in 1971 by raising the status of the former College of Agriculture. The University Order provides that the University shall be a body corporate for the purpose of providing, promoting and

developing higher education in the fields of agriculture, forestry, veterinary sciences, natural sciences, engineering sciences, technology, social sciences, humanities and education, as well as providing research and the accumulation and advancement of knowledge and the dissemination of such knowledge in those fields of study.

4. The National Institute of Technology, which was established in 1972 by raising the status of a technical college. The National Institute of Technology (Incorporation) Order 1972 provides that the Institute shall be a body corporate for the purpose of providing, promoting and developing higher education in the fields of sciences, engineering sciences, technology, architecture and education as well as providing for research and the accumulation and advancement of knowledge and the dissemination of such knowledge in those fields of study.

Legislation, administration and financing

The University and University Colleges Act, 1971 now provides a common legislative framework for all universities in Malaysia. No university or university colleges can be set up without the approval of the Government, and all universities and university colleges are placed under the general supervision and direction of the Minister of Education. A model constitution is provided and all University Constitutions are required to comply with the provisions of this model Constitution, subject to a power of exemption given to the Yang di-Pertuan Agong.

The University of Malaya was constituted under the University of Malaya Act, 1961 and the provisions of the Act are continued in force, in so far as it is not inconsistent with the University and University Colleges Act, 1971. The Constitution of the University of Malaya has however been amended to bring it into line with the model Constitution. The University has a Chancellor, the formal head of the University, a Vice-Chancellor who is the principal executive and academic officer of the University, Deputy Vice-Chancellor, Registrar, Bursar, Librarian and Deans of Faculties.

The main authorities are:

a) The Court - with formal legislative and advisory functions, meeting once a year;

b) The Council - the executive body of the University, meeting once a month;

c) The Senate - the academic body of the University, meeting once a month;

d) The Faculties - the academic body of each faculty, meeting once a month.

The administration of the University is at two levels, namely:

a) the Central Administration represented by the Vice-Chancellor, Deputy Vice-Chancellor, the Registrar and the Bursar;

b) the Institutional and Faculty administration, namely the faculties, the library, the residential colleges, the Computer Centre and the Language Centre.

The University Hospital is managed by a Board of Management.

The Constitution provides for the President and Secretary of the University of Malaya Students Union to be members of the Court. Joint Faculty-Student Committees have also been set up in the various Faculties with staff and student representation to discuss educational and welfare problems of students in the Faculty concerned.

The other newer universities have transitional provisions pending the promulgation of their Constitutions. The University of Science at Pulau Pinang has a Chancellor, Pro-Chancellor and Vice-Chancellor. The affairs of the University are managed by a Board of Management and the University has faculties, schools and centres. The University Pertanian has a Vice-Chancellor and an Interim Council. The University Kebangsaan has a Chancellor and Vice-Chancellor and its affairs are managed by a Board of Management. Academic matters are dealt with by an Academic Committee and the Faculties. The National Institute of Technology has a Rector, a Registrar and an Interim Council.

There is no formal organization at the inter-university level, but informal meetings are held from time to time with the Minister of Education as Chairman. It has been laid down that no new faculty or course may be instituted at any of the universities without prior consultation with the Minister of Education.

The universities derive the bulk of their finances from the Government and the university budgets are subject to the approval of the Government. The Government, after approving the budget, makes grants to the universities.

University institutions

Admission requirements differ slightly as between the three universities: the University of Malaya, the Universiti Kebangsaan and the University of Science at Pulau Pinang. These three universities have set up a central unit to receive all applications to any or all of these universities.

The basic educational qualifications at the University of Malaya are:

i) the Malaysian Certificate of Education, Federation of Malaya Certificate, Cambridge School Certificate or the Sijil Pelajaran Malaysia with five credits including generally a credit in English language and mathematics or a science subject. A pass in

English Paper I in the Higher School Certificate Examination or a satisfactory standard in the general paper is accepted in lieu of credit in English language.

ii) the Higher School Certificate in either two subjects at principal level or one subject at principal level and two subjects at subsidiary level.

The conditions of entry and minimum educational requirements for the University of Science at Pulau Pinang are generally the same as those of the University of Malaya but (a) candidates are required to have a pass in Bahasa Kebangsaan (Malay) and/or a pass with credit in English in the School Certificate Examination, and (b) candidates must have a pass in the general paper and a pass in at least two subjects at the principal level in the Higher School Certificate Examination.

The basic education requirements for the University Kebangsaan Malaysia are:

a) the Sijil Pelajaran Malaysia with at least a pass in Bahasa Malaysia;

b) the Sijil Tinggi Persekolahan in two subjects at the principal level or one subject at the principal level and two subjects at the subsidiary level.

Candidates must also fulfil the special faculty or school requirements.

Bachelor's degree programmes

The courses available in the three universities: the University of Malaya, the University Kebangsaan and the University of Science at Pulau Pinang are as follows:

Stream	University	Faculties/ schools	Duration of course	Degree to be awarded	Medium
Pengajian Islam	Universiti Kebangsaan	Fakulti Pengajian Islam	3 years	B. A.	Bahasa Malaysia with English as compulsory subject. Instruction is also given in Arabic.
			4 years	B. A. Hons.	
Arts/ Humanities/ Social Sciences	Universiti Kebangsaan	Faculty of Arts	3 years	B. A.	Bahasa Malaysia with English as compulsory subject.
			4 years	B. A. Hons.	
	University of Malaya	Faculty of Arts	3 years	B. A. /B. A. Hons.	Bahasa Malaysia and English
		Faculty of Economics and Administration	3 years	B. Ec. / B. Ec. Hons.	
		Faculty of Law	4 years	LL. B. Hons.	

Stream	University	Faculties/ schools	Duration of course	Degree to be awarded	Medium
Arts/ Humanities/ Social Sciences	University at Pulau Pinang	School of Humanities	3 years	B. A. /B. A. Hons.	Some courses are taught in English. Bahasa Malaysia is a compulsory subject.
		School of Comparative Social Sciences	3 years	B. Soc. Sc. / B. Soc. Sc. Hons.	
Science/ Technology	Universiti Kebangsaan	Faculty of Sciences	3 years 4 years	B. Sc. B. Sc. Hons.	Bahasa Malaysia with English as compulsory subject.
	University of Malaya	Faculty of Agriculture	4 years	B. Agri. Sc. /B. Agri. Sc. Hons.	English with Bahasa Malaysia as compulsory subject.
		Faculty of Dentistry	4/5 years	B. D. S.	
		Faculty of Engineering	4 years	B. E. /B. E. Hons.	
		Faculty of Medicine	6 years	M. B. B. S.	
		Faculty of Science	3 years 4 years	B. Sc. B. Sc. Hons.	
	University at Pulau Pinang	School of Biological Sciences	3 years	B. Sc. /B. Sc. Hons.	Some courses are taught in English. Bahasa Malaysia is a compulsory subject.
		School of Chemical Sciences			
		School of Physics and Mathematics			
		Natural Sciences with education in above schools	4 years	B. Sc. with Education/ B. Sc. Hons. with Education	

Stream	University	Faculties/ schools	Duration of course	Degree to be awarded	Medium
Science/ Technology	University at Pulau Pinang	School of Applied Sciences	4 years	B. Sc. Applied B. Sc. Applied (Hons.)	Some courses are taught in English. Bahasa Malaysia is a compulsory subject.
		School of Pharmaceutical Sciences	4 years	B. Pharm. Sc. B. Pharm. Sc. Hons.	
		School of Building Science and Architecture	4 years or 5 years	B. Build. Sc. B. Build. Sc. Hons. or B. Arch. B. Arch. Hons.	
Education	University of Malaya	Faculty of Education	1 year	Diploma in Education	

Post-graduate programmes

University of Malaya. The Faculties which offer post-graduate programmes are as follows:

Faculties	Degrees/Diplomas awarded
Faculty of Agriculture	Master of Agricultural Science
Faculty of Arts	Master of Arts Doctor of Arts
Faculty of Economics and Administration	Master of Economics Post-graduate Diploma in Public Administration (one-year course)
Faculty of Education	Post-graduate Diploma in Education (one-year full-time or two-year part-time study) Master of Education (two years)
Faculty of Engineering	Master of Engineering Science
Faculty of Medicine	Master of Surgery Doctor of Medicine

Faculties	Degrees/Diplomas awarded
Faculty of Science	Master of Science Doctor of Science
Faculty of Law	Master of Laws Doctor of Laws

The candidates in all the faculties of the University of Malaya may also read for the higher degree of Doctor of Philosophy (Ph. D.)

University at Pulau Pinang. All Schools offer post-graduate opportunities leading to Master's degrees and Ph. D. degrees by instruction, research and examination.

University Kebangsaan. The University offers the Master's degree and the Doctorate degree in Arts, Science and Islamic Studies.

Student enrolment

University of Malaya. The student enrolment in 1971/1972 is 8,857, made up as follows:

Faculties	Undergraduate (First Degree)	Diploma	Master's Degree	Doctorate Degree
Arts	3 577	-	65	23
Economics and Administration	1 443	27	7	6
Education	-	524	46	14
Agriculture	383	-	40	4
Engineering	500	-	3	2
Science	1 436	-	81	17
Medicine	654	-	-	5
Total	7 993	551	242	71

Except for M. Ed., work for other higher degrees involve mainly independent research and submission of dissertations/theses.

The policy of the University is to keep the number of undergraduates down to 8,000 over the next five years and to develop itself in the direction of advanced research and post-graduate studies.

University at Pulau Pinang. The student enrolment rose from 57 in the first session to 262 in the session 1970/71. In the third year of development of this University, the figure stands as 681. The details are as follows:

Student statistics, 1971/1972 session

Courses	Year	Malay		Chinese		Indian		Others		Total
		M	F	M	F	M	F	M	F	
Social Sciences	First	45	24	25	19	13	6	-	-	132
Social Sciences	Second	18	15	12	19	7	5	2	1	79
Humanities	First	31	26	20	9	7	5	2	1	101
Humanities	Second	17	10	5	6	-	5	-	-	43
Preliminary Science	Preliminary	15	10	-	-	-	-	-	-	25
Science	First	14	5	133	29	10	2	-	-	193
Science	Second	2	2	39	10	7	3	1	-	64
Science	Third	1	-	29	7	5	1	-	1	44
		143	92	263	99	49	27	5	3	681
		235		362		76		8		

University Kebangsaan. The total student population in 1971 was 572 of whom 393 were first-year students. There are six students doing post-graduate courses. One is doing her Ph. D. and another his Master's in Malay Language and Literature. Three others are doing their Master's in History and one student is doing his M. Sc. degree in Geology.

University of Malaya. The staffing position, as of September 1971, was as follows:

Faculty/Administration	Academic		General		Total	
	Estab.	Filled	Estab.	Filled	Estab.	Filled
Arts	134	113	55	50	189	163
Economics and Administration	87	71	35	33	122	104
Education	47	38	32	29	79	67
Engineering	46	41	67	61	133	102
Agriculture	40	31	166	143	206	174
Medicine	215	152	292	274	507	426
Science	146	134	207	195	353	329
Chancellery	6	5	10	9	16	14
Registrar services	16	15	213	204	229	219
Bursar services	8	7	264	248	272	255
Library services	9	8	131	125	140	133
Student health	3	3	12	12	15	15
Other institutional administration	2	1	220	203	222	204
Total	759	619	1 704	1 586	2 463	2 205

About one-third of the filled teaching posts are held by overseas staff. All administrative and library posts are filled by local staff.

University at Pulau Pinang. The staff position is as follows:

	Full-time	Part-time	Total
Professors	5	-	5
Senior Lecturers	3	-	3
Lecturers	27	59	86
Assistant Lecturers	9	-	9
Tutors/ASTS Fellows	13	-	13
	57	59	116
Administrative Staff	29	-	29

University Kebangsaan. As of 25 September 1971 the University has 97 academic staff members of whom 41 are tutors.

Degrees or diplomas awarded

A total of 2,435 students of the University of Malaya were conferred with degrees and diplomas in 1971, as follows:

B. Agr. Sc.	53	B. Sc. Pass	357
B. A.	840	B. Sc. Honours	199
B. Econs.	362	Dip. and Cert. Ed.	399
B. E.	79	Dip. Pub. Admin.	16
M. B. B. S.	94	Higher degrees	36
B. Med. Sc.	1		

Non-university institutions at the third level of education

Mara Institute of Technology. The history of the Institute goes back to 1954 when the Rural Industrial Development Authority established a training centre for training Malaya in coir and rope making. The Dewan Latehan RIDA, as it was later called, was transformed into Mara College in 1965, and in 1967 it became Mara Institute of Technology. The Institute prepares students for several United Kingdom professional examinations. A number of the Institute's own diploma courses are being conducted and these examinations are standardized by external examiners from London's Ealing College. A start has been made in university studies with the introduction of pre-university arts and science courses. Great emphasis is placed on the teaching of English, mathematics and science. There are now 44 courses of study in 10 schools, including accountancy and finance, computer science, agriculture, engineering, hotel and catering management, library science and pre-university studies. Provision has also been made to establish a junior college to provide upper secondary and sixth form education.

The Ungku Omar Polytechnic. The Polytechnic was established in 1969 through assistance under the United Nations Development Programme

to train technical and commercial personnel. The courses offered are civil engineering, mechanical engineering, commercial courses for accounts, and business studies.

The Tunku Abdul Rahman College. This College had its first intake of 510 students in 1969 in its School of Pre-University Studies. The College plans to have a School of Arts and a School of Science which will offer a programme with emphasis on the physical and biological sciences, leading to external degrees. There will also be a School of Technology and a School of Business Studies, and the College expects to reach the optimum enrolment of 4,300 students by 1975.

Teacher training institutes. There are teacher training institutes for the training of teachers for primary schools in West Malaysia, Sabah and Sarawak. Teacher training programmes will concentrate on upgrading the standards and quality of teachers who can teach in the national language and increasing the output of science and mathematics teachers.

New developments and trends

Campus extensions

Under the Second Malaysia Plan an allocation of M $11.05 million has been provided for the expansion programme of the University of Malaya. The main project is a complex to accommodate such programmes as the Graduate Study Centre, the Electron Microscope Centre and the Students Admission Centre. Extensions will also be made to the Faculties of Economics and Administration, Education, Agriculture and Engineering. Two new residential colleges are also planned. In addition, provision is made for the expansion of the Medical Faculty and the establishment of the Faculty of Dentistry.

Both the University of Science at Pulau Pinang and the Universiti Kebangsaan will obtain their own campuses at Minden Barracks site and at Bangi respectively. The Universiti Kebangsaan will eventually include Faculties of Medicine, Engineering and Economics and Commerce in addition to the present Faculties of Science, Arts and Islamic Studies. An administrative complex and three residential colleges will also be constructed. An amount of M $40 million has been provided for the University under the Second Malaysia Plan. The University a. Pulau Pinang has prepared a master plan to develop the Minden Barracks site. When completed the University will have facilities for the School of Biological Sciences, the School of Chemical Sciences, the School of Physics and Mathematics, and the School of Cultural and Community Studies, a Centre for Educational Sciences, lecture theatres, residential halls, and a student centre. A sum of M $18 million has been provided for the University in the Second Malaysia Plan.

The use of Bahasa Malaysia

At the University of Malaya, various steps have been taken to foster the use of Bahasa Malaysia as a medium of communication and instruction in the University of Malaya:

a) the administration of the University including ceremonies is now conducted in Bahasa Malaysia;

b) faculties have been directed to draw up realistic implementation programmes for the greater use of Bahasa Malaysia in its teaching programmes. Students in all faculties are now required to take a compulsory course in Bahasa Malaysia;

c) Istilah Committees have been set up for each faculty to help in the adoption of appropriate technical terms in Bahasa Malaysia.

Improvement of student facilities

The following steps were taken during the session to improve student facilities and to foster greater unity among students at the University of Malaya:

i) the dental service was implemented and is well attended by students;

ii) the students' counselling service has been started with the appointment of a full-time Students' Counsellor;

iii) joint Faculty-Student Committees have been set up in the various faculties with staff and student participation to discuss educational and welfare problems of the students in the faculty concerned;

iv) library services have been improved by extending opening hours to 11.30 p.m. and opening the library daily including weekends during the third term. "Red-Spot" books facilities have also been improved;

v) extra reading space facilities were provided in the third term by opening the air-conditioned Dewan Tunku Chanselor daily until midnight;

vi) residential college facilities are also being improved as follows:

a) Extensions to the first and second colleges are under construction and a seventh college is being constructed to provide accommodation for students;

b) A system of associating non-residents with the colleges is being introduced so that non-residents may also enjoy facilities available to resident students;

c) The College Delegacy is being reorganized involving a tripartite participation, i.e. the Administration Masters, Fellows and Students;

d) Allocation of places in the colleges has been organized so as to reflect a balance of the various ethnic groups and to encourage greater mixing among students of different cultures, background and language mediums.

vii) a physical education organizer has been appointed to assist and advise the students in their recreational activities and to take charge of the sports activities of the University;

viii) loans totalling about M $90,000.00 were made to students in need of financial assistance and procedures for payment of scholarships have been speeded up with the appointment of a senior administrative staff to take charge of loans and scholarships.

Off-campus education

The University of Penang, as a newly established institution independent of any other university in Malaysia, has the tremendous advantage of being unfettered by rigid established structures and therefore able to make exciting advances into new fields. While preserving its essential role as a teaching institution, it aims at the same time to be actively involved with the society that supports it. It will be concerned not only with the acquisition and transmission of knowledge but also with its application to the affairs of the community as a whole. This is particularly important because of the many changes currently taking place in the Malaysian society. To function effectively it must keep in constant touch with contemporary realities and to be able to serve the social and economic needs of the community. In relation to this objective and that of providing complementary facilities currently not available elsewhere in the country, the University has boldly ventured to offer an off-campus education programme in the humanities and the social sciences. This is primarily to provide university education leading to degree awards to adult students above the age of 23 years who are in full-time employment or working in the home. The programme functions to balance the inequalities of opportunity that exist between working men and full-time university undergraduates.

Courses are offered at three levels of academic study with each level corresponding to the requirements for each of the three full-time years of study. Off-campus students, however, will be required to take two years to complete each of the first two levels and a total of five to six years to complete all courses required for a degree.

Senior Fellowship Scheme (Ahlichipta)

The University of Penang also intends to tap all available resources both for its own use and for the use of the public in general. These would include areas hitherto unexplored. There is a group of men and women who because of advancing age are too often dismissed as having

no further contribution to make to the community or who have currently no channels through which they could make their contributions. They are the "retired professionals", men and women who have spent the major part of their lives earning their living as teachers, administrators, commercial executives, journalists, artists, politicians, police officers, factory managers and the like. Many of them are still mentally alert. For them the University has instituted a new programme known as the Senior Fellowship Scheme (Ahlichipta).

Under this scheme, men and women who have retired from at least 15 to 20 years of active professional life are invited to set down in writing their experiences and knowledge which the University will publish for the use of the undergraduates and the public in general. In due course, such a scheme is expected to result in a unique collection of works by local Malaysians which will be of great subsequent value to succeeding generations of Malaysians. This will contribute towards the conservation of knowledge as well as its application to actual affairs of the community in general.

On being appointed as Senior Fellows of the University, they will receive a monthly honorarium and will be provided with the necessary office and supporting facilities to carry out their work. They will also be required to participate in tutorial classes and seminar groups relevant to their projects. This will give them an opportunity to test their practical and vocational experience against the theoretical knowledge of the students and staff. In this exchange both will benefit. Whenever the occasion arises, they will be encouraged to participate in community work that will further contribute towards the integration of the University with the community.

It is hoped to extend this scheme at a later stage to include younger professionals who on having completed at least 10 years of service may take leave from their work and enjoy the intellectual stimulus of being in the University of Penang.

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HIGHER EDUCATION IN THE PHILIPPINES

by Alfredo T. Morales

Historical background

Higher education was established in the Philippines with the founding of the University of Santo Tomas in Manila in 1587 by the Dominican Order (the year 1611 is more commonly mentioned as the year that the institution became firmly established), and the founding of the Colegio de San Ildefonso in Cebu in 1595 by the Jesuits (from which the present University of San Carlos claims its origin). It reflected the goals of Spanish imperialism as surely as the entire present-day system of Filipino higher education, including the modernized University of Santo Tomas and University of San Carlos, now reflects the contemporary Filipino social order and its goals.

During the time of Spanish imperialism, higher education was not open to Filipinos but was only for the Spanish youth in the country. Later Jose Rizal and other historic Filipino leaders of his generation, born in the 1850s and 1860s, succeeded in obtaining the bachelor's title, which was a title at the secondary education level, obtained only by a handful of Filipinos at this late stage of Spanish rule. Rizal and many of his contemporaries had to go to Western Europe and England to acquire further education and preparation for the professions.

Following the defeat of the Spanish by the Americans in 1898, the latter worked with the Filipinos to organize a new system of higher education in conformity with American goals. From its founding in 1908, the University of the Philippines, the only State university established for Filipinos by the Americans and patterned after the American State land-grant universities, has served as the strongest training ground for the independence movement and Filipino nationalism, besides moulding creatively superior standards of scholarship in the country.

Under the American rule, there were some institutions where the pursuit of excellence and academic freedom were dynamic realities, but the system developed by the Americans and co-opted by the Filipinos expanded unrestrictedly and became the businessman's and politician's

vested interest. Freedom of access to higher education was enjoyed so extensively as to have fallen into a state of license and prodigality, for the number of institutions of higher education reached a total of 628 in 1970. Of this number, the private institutions, mostly dependent on student fees for financing, were 545 and absorbed 90 % of the studentry. The total national enrolment of about 790,000 is estimated to be about 20 % of all youth of college age. The correlation between this expansion of higher education and national economic development is negative to a high degree.

In the 1961 ILO survey, the sample population from Philippine urban areas with higher education amounted to 193,000, including 31,000 who had no work for the last preceding five years. Of the total, 27 % were entirely dependent and 21 % partially dependent on parents and relatives, and the majority of these dependents were 25 years old or over. One-fifth of the total had been out of work and looking for work all the time since finishing high school. Besides the economic system's inability to provide enough job opportunities for persons with higher education, there has also been a mismatch as well as a certain amount of unemployability of products of higher education relative to the requirements of the economy.

There are some of the employment/unemployment data related to a runaway quantitative expansion without the requisite qualitative development, besides a deficiency in co-ordination between economic and educational planning, which a system of formerly colonial higher education in the Philippines has exhibited in its 25 years of post-war independence.

Policy-making, administration and financing

Policy-making for higher education is exercised by both executive and legislative branches of the presidential type of democratic government in the Philippines. In the executive branch, the Department of Education, headed by the Secretary, executes general policies laid down by the Board of National Education, of which the Secretary of Education is the chairman. Except for independently-run chartered State colleges and universities like the University of the Philippines, he administers and supervises the entire national system of public and private education, including higher education, through three bureaus: the Bureau of Public Schools, the Bureau of Private Schools, and the Bureau of Vocational Education. Private institutions are organized by their founders upon authority of the Secretary of Education, and they attain recognition of the status of a university only after meeting requirements prescribed by law and receiving the approval of the Secretary, who also serves as chairman of each of the governing boards of all 25 chartered State institutions and the five regional normal colleges under the Bureau of Public Schools.

The legislature, the University of the Philippines, the general public and government and non-government educational bodies are represented on the Board of National Education. The legislature not only has representation on the Board but often exercises its prerogative as a co-equal branch of the Government to initiate educational policy independently of the executive branch, or successfully winning over the latter through the manifold practices of legislative influence. The curriculum may be affected and new institutions may be created through legislative process overruling the views of the Department.

The Government provides financial support for all State or public institutions of higher education through the annual national budget prepared by the executive branch and enacted into law by the legislature. Of the 628 colleges and universities in 1970, 545 are private institutions which have been organized by religious orders and churches or organized as stock corporations. On the whole these private institutions depend for the major portion of their total annual revenue on student fees, whether they are non-profit making as in the case of the former type or profit-making as in the case of the latter type of institutions. They receive no financial support from the government budget. However, government funding for scholarship programmes and research projects is available to private as well as public institutions from various executive units and government corporations.

Institutional donors, especially well-known foundations, have made major grants to selected colleges and universities for development programmes. The United Nations Agencies, educational exchange and development programmes of foreign countries, multilateral and bilateral, and the foreign scholarship and study-tour programmes, represented external sources of assistance being received by Philippine higher education. The Government has also negotiated development loans from the World Bank for State institutions, such as the loan granted to the College of Agriculture of the University of the Philippines and the loan in prospect to implement some projects recommended by the Presidential Commission to Survey Philippine Education.

Numerous non-government scholarships, fellowships, and other grants from private donors are also available, the largest number being offered at the University of the Philippines.

The annual national government budget sets aside almost one-third of its total appropriation for the support of public educational institutions including higher education. About 90% of this allotment goes to the Bureau of Public Schools for public elementary, secondary and adult education. The University of the Philippines and other State colleges and universities receive a separate appropriation from that of the Department, and this is estimated to amount to about ₱ 70 million in 1970. Moreover, their buildings and other constructions are funded separately under the Public Works Act.

Academic programmes, staff, and students

Completion of a four-year secondary education is a basic requirement for admission to the first year of any college and university course, including those non-degree courses for certificates and diplomas below that of the Bachelor's degree. The State-chartered institutions and some better private institutions also require admission tests for selection, but the general practice in the private sector legitimized by the existing law is to accept the secondary school diploma as the sole basis of eligibility to continue in higher education. There is an increasing use by more private institutions of entrance tests, not for eligibility standards but for guidance purposes. Thus as a general rule, Filipinos enter college after 10 years of schooling and at the age of 17 years.

Academic programmes for full-time study required a minimum of four years for the Bachelor's degree, except in some professional colleges, one to two years for the Master's and three or more for the Doctorate degree after the first university degree. Five years are the minimum for the undergraduate degree in agriculture, engineering and pharmacy. Dental medicine and veterinary medicine require a preparatory two-year curriculum in liberal arts and four years in the professional curriculum for the professional doctorate. A four-year Bachelor's in liberal arts before the four-year professional curriculum is required for the Bachelor's degree in Law. Medicine also requires a four-year Bachelor's in liberal arts, followed by a four-year professional curriculum leading to the professional doctorate, after which additional requirements prior to Board examination for professional licensing consist of internship in a teaching hospital under medical faculty supervision for one year, and practice attached to established hospitals and clinics in the field without faculty supervision for another year. Professional degree holders must pass their government licensing Board examinations before they can practise.

Putting together the public and private institutions, their academic programmes offer a scope and variety, indeed a proliferation, which responds to every conceivable demand of the country. They extend farther by supplying the professional needs of some foreign countries, whether through native graduates who join the brain drain or through facilities for training foreign students. Department of Education sources have recently estimated as many as 80,000 foreign students enrolled in all schools, including the Chinese schools, in the Philippines, and of this number 20% on the higher education level would be a conservative estimate.

The University of the Philippines has undergraduate programmes in agriculture and forestry, arts and sciences, Asian studies, business administration, dentistry, economics, education, engineering, fine arts and architecture, fisheries, home economics, law, library science, mass communication, medicine, music, nursing, pharmacy, statistics, and veterinary medicine. It has graduate programmes in Asian studies,

business administration, engineering, forestry, home economics, hygiene, law, library science, mass communication, medicine (basic sciences), music, nursing, planning, and population for the Master's, and in agriculture, arts and sciences, economics, education, pharmacy, public administration, and statistics up to the doctorate. There is a special annual allotment for organized research at the State University administered by the University Research Council.

The coverage of fields by the academic programmes in private higher education is almost as extensive, but there is a significant divergence from the State University in the expansion of low-cost programmes and the distribution of enrolment among the various programmes. From data gathered by the Higher Education Research Council of the Philippines, in 400 responding private colleges and universities there are 925 four-year degree programmes, of which 65% are represented by teacher education (30%), liberal arts (25%), and commerce and business (10%). Correspondingly, of the total private higher education enrolment there are 87% in these courses on the undergraduate level. In 10 years up to 1968, with a total number of 416,000 college graduates, there were only about 10% who received graduate degrees. Fifty per cent of the graduate programmes are in education. In comparison, education at the State University since the University's founding in 1908 is behind such professional studies as agriculture and forestry and the combined medical professions of medicine, nursing, dentistry, pharmacy, and public health, in total number of graduates, but it now lags behind in student enrolment not only in these fields but also such additional professional fields as business and engineering.

The student-faculty ratio at the State University in 1972 is 1:10 (1,929 full-time faculty to 19,329 students; not counting 261 contract lecturers, and part-time faculty and temporary substitute faculty). The national ratio in private institutions was 1:25 in 1968-69 (23,929 faculty to 565,035 students). The student-faculty ratio becomes more meaningful when placed beside a profile of faculty distribution according to rank. While this type of data is not available for private institutions, the State University presents the following distribution for 1962 and 1972:

Faculty distribution

	1962	1972
Professors	81	145
Associate Professors	120	218
Assistant Professors	281	553
Instructors	730	965
Assistant Instructors	157	48
	1 369	1 929

Data on enrolments in public and private collegiate institutions show that from 1961-62 to 1966-67, public participation decreased from 10.9% to 7.5%, while private participation increased from 89.1% to 92.5%. By 1980-81 it is estimated that the total enrolment will reach over 2 million, of which private institutions will have about 1,900,000 while public institutions will have about 125,000.

A number of institutions are actively and directly engaged in research, or instruction, or both, at the higher education level, going beyond the familiar practices of extending co-operation to all interested parties on scholarly and professional projects. They are manned by highly trained and respected scholarly personnel who because of their advanced qualifications are in demand in universities as contract part-time lecturers besides performing their intellectual duties for their offices. These institutions include the Institute of National Language, the National Library, the National Museum, and the National Historical Commission, which are all part of the Department of Education.

A student union building, or at least accommodations in university buildings for offices, meetings and conferences of student organizations, a health service staff and clinic or infirmary, a student-run publication, and a guidance, counselling and testing centre which sometimes includes a placement service for graduates are standard units for student personnel services to be found in both public and private institutions of higher education.

Professionally organized guidance, counselling and testing centres have enjoyed a recent expansion and elaboration during the last 15 years of the traditional college and university offices for Dean of Men and Dean of Women. Similarly, facilities in the form of auditoriums, theatres and suitable places for dramatic, musical and dance performance or festivals are included in the physical plant of the institutions.

Each institution has a Department of Physical Education which not only conducts a regular academic programme for the compulsory physical education requirements for all degree programmes but also for degree specialization. A standard part of its plant is a gymnasium in which not only classes but also recreational games organized by students are held.

The chartered State institutions and most of the older private institutions, especially those which are church-related and those for women, have expanded their residential facilities since the war but are not in a position to offer accommodations for all their full-time students. The State University, for example, which built residence halls on its main campus only after the war, is estimated to have enough accommodations for only about 20% of its students.

Besides financial assistance to students in the form of scholarships, both public and private institutions also have established supplementary

assistance programmes in the form of student loans and student employment opportunities. These institutions have also established cafeterias and other feeding arrangements for the benefit of commuting students who have to take their meals on the campus.

One of the greatest changes instituted recently in response to the demands of student activism and in the interest not only of student life and welfare in the traditional sense but particularly in connection with their academic life and career on the campus has been the new practice since 1970 of including the head of the university-wide student organization as a member of the Board of Regents, or the Governing Board, of State institutions. From the top policy-making level down through the hierarchy of academic bodies into which the faculty is organized, a system of participation by duly elected student representatives has been implemented. This system is also paralleled in varying measures of student participation in the private institutions.

Problems, needs and new trends

The main trouble facing the system of higher education in the Philippines is that the urgent and critical demands of national socio-economic and cultural development at this crucial turning-point in the history of the country do not receive the potential service and its inputs of material and human resources. The ILO data of unemployment and dependence of a considerable portion of people who possess higher education is only one of the dark facets of this paradox of the Philippines.

It would be an over-simplification of this deep-rooted and pervasive problem to try to analyse it exclusively in terms of a need for improved educational planning at the highest level, utmost co-ordination of economic and educational planning, consultation and co-operation within the Government and between government officials and industrial and non-government educational leaders. Filipino history and the moulding of the people's value system through varying encounters and mixtures with foreign cultures have set influences to work upon this problem more than educational professionalism and scholarship can direct or control.

Next to planning at the highest level - which embraces resource allocation, management structure, and administrative direction - the root of the problem is the integrity of academic values which should characterize university education as the embodiment of a people's intellectual culture and should assure the maintenance of satisfactory standards of performance in the professions and in the various services in and out of government. Planning determines process, and quality gives value to the product; but process and value are subordinate to the third greatest problem and need of the system of higher education in the Philippines, which is relevance. This means a rededication of the best education the nation can design and develop to the common good and the continuing betterment of the quality of life of the common people.

These three determinants of the future of the Philippine system of higher education - planning, quality, and relevance - are already at work and the new trends one may find in several educational fields can best be seen in one of the oldest and most prestigious of its fields, namely, medical education. Science in the Philippines has no doubt reached some of its most advanced and sophisticated specializations in this field as shown by the fame and affluence of its leaders in the country. All the troublesome aspects of post-war evolution became manifest in this specialization, but its leaders have succeeded in launching an educational revolution by uniting, for the first time, government leadership with leadership in medical education and practice, including inter-university co-operation, by adopting and inaugurating a new system of quality control beginning with selective quotas for student admission to the professional colleges, and by reforming the curriculum to remove deadwood, install greater concentration, introduce new educational technology and performance-based instruction and evaluation, increase practical application and experience in working in the rural areas on community health problems and not only in urban hospitals on treating élite patients. These reforms are imbued with the philosophy and technique of research and development and inspired by social vision and commitment. The new medical education represents the ferment taking place today in agriculture, teacher education, engineering, the social and natural sciences, law and other fields. In this ferment is the hope of Philippine higher education.

Statistical data

Table 1. Percentage distribution of programmes of study in institutions of higher education at the Bachelor's degree level, 1970-1971 *

	Per cent
1. Teacher education	30
2. Liberal arts	25
3. Commerce and business	10
4. Engineering, technical and technological education	8
5. Agriculture, forestry and home economics	7
6. Medicine and other health sciences	6
7. Law and foreign service	6
8. Natural science specialization	3
9. Fine arts	3
10. Mathematics (pure and applied)	1

* Source: Dr. Josefina Cortes. Report on Growth of Institutions of Higher Education in the Philippines to Higher Education Research Council (manuscript), 1972.

Table 2. Collegiate enrolment in private and public schools in the Philippines

School year	Private schools	Public schools	Total
1961-62	283 420	34 696	318 116
1962-63	320 439	53 387	373 826
1963-64	346 081	43 729	389 810
1964-65	390 454	42 376	432 830
1965-66	468 173	46 497	508 670
1966-67	492 652	39 729	530 381

Source : R & D Statistical Bulletin, Funds for Assistance to Private Education, Vol. I, Nos. 7-8, September 1971.

Table 3. Number of private college graduates by selected fields, 1966-1970

Fields	1966	1968	1970
Agriculture			
Chemistry	542	418	329
Commerce and B.A.	11 442	13 397	16 198
Engineering and Tech.	4 278	4 759	5 537
Home Economics	1 042	706	668
Law and Foreign Service	1 517	1 493	1 401
Liberal Arts	13 343	9 807	8 874
Medical Sciences	5 247	3 826	4 073
Music and Fine Arts	528	603	444
Nautical	31	23	19
Teacher Training	33 509	46 473	29 274
Graduate M.A.	376	512	387
Others	5 987	7 773	8 475
Total	78 257	90 182	76 066

Source : R & D Statistical Bulletin, Fund for Assistance to Private Education, Vol. I, No. 6, August 1971.

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HIGHER EDUCATION IN THAILAND

by Sippanondha Ketudat

The original role of Thai university was to train civil servants. In recent times the university has been an instrument of national development in producing manpower at high level. The university have been surprisingly successful in carrying out this function although it is operated in the civil service system. As the number of institutions increases and a rapid expansion takes place in student enrolment and in academic programmes, the problems have mounted manifold in over-coordination and in the rigidity of the administration, management, and financial rules and regulations imposed by the civil service system. A new plan of university system reorganization to cope with these present problems and future challenges has been jointly developed by the universities, the National Education Council and the University Development Commission. The plan now awaits decision at the very top level which is soon expected.

Historical background

Higher education is relatively new in Thailand, dating only from the last part of the nineteenth century. Up to a decade ago, the primary function of a university[1] was to train civil servants. The first institution, Chulalongkorn University, named after a beloved King whose reign had seen great strides made in public education, was established in 1917 by amalgamation of the School of Civil Servants, the Royal Medical College and a recently founded Engineering School. One year after the revolution of 1932 when a constitutional monarchy form of government was initiated, the University of Moral and Political Sciences, now called Thammasat University, was founded as an autonomous institution and soon became the centre of studies for social sciences. During the decade that followed, three more universities came into existence, each of

1. The term "university" used here means higher education institution having academic programmes at least at the Bachelor's degree level. For practical purposes, the universities discussed in this article are government institutions; only a few institutions with much smaller total enrolment are private.

which was a department[2] of a specific ministry. The University of Medical Science, now called Mahidol University, was in the Ministry of Public Health; Kasetsart University specializing in agricultural science in the Ministry of Agriculture, and Silpakorn University specializing in fine arts in the Ministry of Education. In 1954 the College of Education was chartered in the Department of Teacher Training of the Ministry of Education and assigned the task of producing teachers at diploma and degree levels. It should be noted that all but one university had a direct relationship with a government ministry and also all are situated in the neighbourhood of Bangkok, the capital city where the ministries are located. Co-ordination among universities was almost unknown but rather the university's role was co-ordinated with the function of the ministry. Unlike the situation in many countries, where a university was a community of scholars engaged in the pursuit of truth and the dissemination thereof by means of research and teaching, a Thai university was a professional training school for the Government; and consequently, has had a direct and strong involvement in national development from the dawn of the twentieth century.

A major change of emphasis of higher education in Thailand came soon after the revolution of 1958 when strenuous effort was exerted by the Government to accelerate the pace of economic and social development. All universities except the College of Education expanded their mission to cover broader areas of study and were transferred to the Office of the Prime Minister in order to encourage better co-ordination among the universities. The National Education Council was created in 1959 to serve as an advisory and co-ordinating agency for development of education in Thailand. In higher education the Council also plays important roles in planning, co-ordination and quality control. From 1960 onward three more universities were created outside Bangkok in order to promote the acceleration of development in the provincial centres in the north, the north-east and the south. A National Institute of Development Administration was founded to take care of training and research at the post-graduate level in development administration. A new amalgamation of technical institutes was carried out to form a technical university.

Even with such rapid growth in the number of universities, in enrolment and in areas of study the higher education system as a whole has not been able to cope with the demand of the population. A large portion of students each year has to go abroad in order to obtain any higher education. Consequently, in 1971 the Parliament passed a bill to create an open university. In the first year the enrolment of this open

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2. A Department is a sub-division of a ministry in the Thai administrative system.

university was 40,000, almost equalling the number of students of all other 11 universities [3] in Thailand.

The purpose of the university has come a long way starting from the training of civil servants, advancing to the acceleration of national development and now leaning towards satisfying social demands.

Administration - overview and external relationship

Each university is created by a special legislation. It possesses a juridical personality with a status of a department in a ministry. Ten out of twelve government universities are in the Office of the Prime Minister, two others in the Ministry of Education because of the historical development and because of a recent amalgamation of institutions under the Ministry. All teaching and supporting staff are civil servants. All civil service rules and regulations or their equivalence apply to universities. Compared with State universities in most other countries, a Thai university is far from being autonomous.

At present there is no single body that co-ordinates universities, nor a body that acts as a liaison between universities and the Government. The five-year development plan of universities is co-ordinated and integrated with the development plan of other levels of education by the National Education Council. The task of integrating the educational development plan with those of other sectors rests with the National Economic Development Board. The annual university budget, subdivided into faculty and departmental budgets, is considered and consolidated by the Budget Bureau of the Office of the Prime Minister. The Budget Bureau normally consults the National Education Council and the National Economic Development Board on annual budget proposals from universities. If foreign assistance, technical or otherwise, is needed, a university must submit its request for approval to the Department of Economic and Technical Co-operation which again tries to co-ordinate all requests for assistance. There are many such agencies for co-ordination. Many problems arise from over co-ordination by many agencies who treat universities in a fair manner in comparison with many other departments whose roles are primarily administrative.

Administration - internal affairs

For each university there is a policy and a governing board, the University Council. Members of the Council include the Prime

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3. The universities in Thailand and the year of foundation are: Chulalongkorn University (1917); Thammasat University (1933); Mahidol University (1942); Kasetsart University (1943); Silpakorn University (1943); College of Education (1954); National Institute of Development Administration (1966); Chiangmai University (1964); Khonkaen University (1965); Prince of Songkla University (1968); Chomklao Institute of Technology (1971); Ramkamhaeng University (1971).

Minister as Chairman, the Rector, deans, several department heads, a few senior government officials and a few scholars from other institutions. The chief administrator is the Rector who carries out the tasks according to the policy laid down by the University Council. Legally the Council has a great deal of power in the areas of policy, academic development, appointment of academic administrators and professors and many others. But in practice all matters are decided beforehand by the committee of the deans chaired by the Rector. The academic and administrative sub-division of a university is called a faculty which contains a group of closely related disciplinary-oriented departments. The dean usually runs the faculty, although in academic programmes the policy is determined by the faculty board consisting of the dean, department heads and professors, one from each department. In older universities, especially the ones established before the 1960s, a university is a federation of faculties. Each faculty is quite independent from the others.

Financing of university

The sources of funding of a university can be divided into four categories, namely, (i) the Government; (ii) income from university property, tuition, and services; (iii) grants; and (iv) technical assistance. During the first four-year period of the Second National Socio-Economic Development Plan 1967-1971, the distribution [4] of income from these categories was 81% from the Government; 8% from property, tuition and services; 3% from grants; and 8% from technical assistance. It is seen that the major support of universities came from the Government budget. During the same period, Government support to universities amounted to 16.8% of the education budget for the whole country, or 2.8% of the national budget, or 0.48% of the G.D.P. [5]

It is interesting to note that a large sum of money is being spent on the education of Thai students overseas because the higher education system in Thailand is not capable of providing enough seats for these students. Not counting those who obtain fellowships through technical assistance, it has been estimated that there are over 5,000 Thai students at higher education institutions in the United States and over 10,000 in Europe, Japan, Australia and New Zealand. The sum of money spent on these students is at least 25 million US dollars per year. The present expenditure on higher education in Thailand is approximately 50 million US dollars per year for about 50,000 students in the regular universities and 40,000 in the open university.

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4. Thailand. National Education Council. Higher Education Committee. *The present status and problems of higher education during the Second National Socio-Economic Development Plan, report*. Bangkok, 1970. p. 44 (In Thai)

5. *ibid*, p. 45.

University affairs

Academic programmes. When all universities are taken into account, over 100 academic programme majors are offered at the bachelor's degree level. Many universities in Thailand offer only a few closely related professional areas of study. This situation is to be expected since all universities established prior to the 1960s grew out of professional schools of government ministries. In these universities, curricula are quite rigid and narrowly oriented along departmental lines and concentrated toward particular professions. A student is left with little choice in selecting subjects of his own. The concept of general or liberal education is realized only in a few universities, and for these universities it was initiated only in the last decade. The rigidity of the curricula and the inflexibility of the university structure do not permit problem-oriented or interdisciplinary-oriented programmes of study at the bachelor's degree level. Most bachelor's degree programmes take four years with the exception of medicine and a few health science disciplines which take six years to complete. The language of instruction is Thai, but most students have just sufficient listening comprehension skill in English to understand visiting professors and foreign teaching staff members.

Admission requirements. An applicant must pass the nation-wide secondary school examination. For all universities except the open university which requires only a secondary school diploma to be admitted, an applicant must take a joint university entrance examination. In applying for a university seat he is allowed six choices, listed in his own order of priority, of faculty within a given university where he wants to be admitted. The designation of a faculty prescribes a set of examination papers, usually about five subjects, that he must take. Combined scores of subjects prescribed for each faculty-university of applicants are ranked with applicants' orders of priority taken into account. Those applicants whose scores are ranked within the number of available seats of the faculty-university are entitled to take perfunctory oral and physical examinations. Admittance is primarily based on ranking of the entrance examination alone. The number of applicants of all universities except the open university at present is about 30,000 and approximately one-third are admitted.

A secondary school graduate of the northern, northeastern and southern provinces with a secondary school examination grade of 80% or over can be admitted to his provincial university with his choice of faculty without taking the university entrance examination.

Teaching staff. Because of the rapid expansion of the university system since the late 1950s, the number of teaching staff has increased at a fast pace. Since there was almost no graduate programme available in the country and the number of Thais with graduate education returning from abroad was yet small, the university has resorted to appointing

recent graduates with bachelor's degrees to teaching positions. As a result almost 50% of the teaching staff at present have only bachelor's degrees. Most universities have to rely on a large number of outside lecturers who come from government offices or from experienced teaching staff members of other universities. The academic training qualification of teaching staff is shown in Table 2.

Students. The total enrolment of undergraduate students in the various fields of study during the Second National Socio-Economic Development Plan 1967-1971 is shown in Table 1. It is seen that the annual increase is approximately 10%. The total number of graduates during the same five-year period in comparison with the manpower requirement is shown in Table 3. Although there were attempts to increase enrolment and the number of graduates in the four fields of study, namely, engineering, natural sciences, health and agricultural sciences since the First Plan, the supply of graduates was lower than the estimated requirement except for engineering where the estimate of the manpower requirement seems to be in error.

Universities have increasingly given students more participation in student affairs and to a limited extent in university affairs. There are elected student governing bodies at the university and faculty levels. Extra-curricular activities and intra-mural sports are conducted by these student bodies. In general a student welfare programme arranged and managed by the university has so far been quite limited.

Teacher-student ratio. The overall teacher-student ratio is approximately 1 to 10. At the first glance Thai universities seem to be much better off than most universities elsewhere; but when all factors are scrutinized in detail, this ratio does not seem to be meaningful, or comparable with other institutions. First of all, it has been a long practice in Thailand that a teacher spends a long time with students in instructional programmes. The student class contact hours per week averages between 25 to 30 hours, almost doubling that elsewhere. Secondly, the teacher has to perform other clerical and administrative duties since clerical and administrative positions are usually not approved by the Budget Bureau. Thirdly, about 50% of the teachers are recent graduates with little or no experience at all in teaching. Fourthly, the overall ratio does not give a true picture representing the load of work of individual teachers or individual departments.

Graduate education and research. Prior to the early 1960s universities only provided education beyond the first degree level on an individual basis. Teachers would persuade exceptionally bright students to assist them in conducting research, and in return for the work and the report of the research findings, master's and doctorate degrees were granted. At that time there were no more than a dozen students receiving graduate degrees per year. Research programmes of notable results were those in the fields of medicine and agriculture. It was generally

accepted that the role of the university was teaching. Consequently, neither money nor time was allocated for research and graduate education. Those who wanted further education had to go abroad.

At present there are over 40 programmes of studies at the master's degree level at several universities with the total enrolment of nearly 4,000 students. The duration of the master's degree programme is two years. Several Ph. D. programmes of very high quality in the life sciences have been initiated at Mahidol University. The language of instruction of many programmes is English.

Recently the Government has initiated several high quality graduate programmes in the fields of the basic sciences, mathematics and economics in order to overcome the shortage of university teachers in these fields. These programmes also encourage research that is relevant to Thailand.

Other institutions at the third level

There are 8 other types of non-university institutions at the third level of education:

1. Teacher training colleges. The teacher training colleges are supervised by the Department of Teacher Training of the Ministry of Education. At present there are about 30 colleges situated at large provincial centres all over the country. Each college offers two diploma-level programmes, one a two-year programme after grade X and an additional two-year programme granting a higher-level diploma.

2. Technical, agricultural and business colleges. These three types of colleges are supervised by the Department of Vocational Education of the Ministry of Education. They have a three-year programme after grade X and another two-year programme that follows with specialization in different areas of vocation.

3. Physical education colleges. The colleges offer a two-year programme and are supervised by the Department of Physical Education of the Ministry of Education.

4. Nursing colleges. There are several types of nurse-training institutions; some are private associated with hospitals, some are government institutions attached to large provincial hospitals and some are established under the Department of Public Health of the Ministry of Public Health.

5. Buddhist colleges. There are two recognized Buddhist colleges associated with two major temples located in Bangkok. The four-year programme covers predominantly Buddhist philosophy and the study of Pali scriptures, with some general education courses. The students are Buddhist monks. Each college is governed by its own council under the supervision of the Buddhist Council.

6. Military and police academies. The academy offers a two-year preparatory programme after grade X and a four-year programme that follows. Each academy is governed by the respective branch of the Armed Forces and the Police Department of the Ministry of Interior.

7. Private colleges. The Private College Act of 1969 allows the establishment of privately-owned colleges, but strict regulations are enforced jointly by the Ministry of Education and the National Education Council. At present there are 6 private colleges with the total enrolment of about 3,000. All colleges are located in the Greater Bangkok area. All offer programmes in the areas of social sciences especially in accountancy and business administration. One college, however, offers a small programme in engineering.

8. Asian Institute of Technology. AIT, growing out of the SEATO Graduate School of Engineering attached to Chulalongkorn University, is the only private and autonomous institution of higher education in Thailand. It receives subsidies, grants and donations from governments, foundations and private companies and individuals from all over the world. The programme is limited to graduate education in engineering.

New developments and trends

It has long been realized by Thai scholars and administrators that the roles of universities were quite limited and that the co-ordination, the administration and management of universities were too rigid and primarily designed for civil service agencies. During the past several years the universities, the Office of the National Education Council and the University Development Commission have been working on a new blue-print for a more effective university system through a series of inter-university seminars and joint working groups. The basic principles have already been accepted by the Government.

In this new scheme, a university would be autonomous in its own internal affairs. A lump-sum grant would be given by the Government to the university through a central agency similar to a University Grants Commission elsewhere. The role of this central agency is not a buffer but rather a softly-coupling intermediary between the Government and the universities in two affairs, namely, in finance and in balancing the manpower and social requirements of the Government on the one hand and the university aspirations on the other. Development plans of universities would be co-ordinated and consolidated by this central agency. Quality control, accreditations, and broad guidelines in personnel and financial administration would be handled by a Council of Rectors. Internally, teachers and students would have more participation in university affairs through a faculty senate and a student council.

Even before the final decision from the Government on this issue which is expected to be some time in the middle of 1972, rectors have met regularly on the aforementioned affairs. Faculty Senates have been

established in a few universities. An intermediary body similar to that described above but with its role limited to graduate education have been established as a trial. As has already been mentioned earlier, the University Development Commission was established in 1967 to co-ordinate and strengthen graduate education in order to produce university teachers and encourage research relevant to problems of Thailand.

Conclusion

Some 50 years ago when Thai political leaders first began to construct facilities for higher education, they aimed at developing an institution that would produce graduates capable of serving the needs of a modern nation. The individuals involved in this task put forth a great deal of energy and clearly were able to achieve substantial success.

Today, rapid and widespread advances in science, both natural and social, and in technology have brought on a need for fundamental changes in concepts, goals and structure of universities. Thai scholars and administrators are fully aware of this challenge. It is encouraging and comforting to see that the change is not merely to be responsive to advances in science and technology and to development alone, but it is being viewed within the context of Thai values and heritage that are deep and long lasting.

Statistical data

Table 1. Enrolment at the Bachelor's degree level [1]

Year	Total	Humanities	Education	Fine arts	Social sciences [2]	Natural sciences	Engineering	Medical sciences	Agriculture
1967	33 986	2 144	5 972	243	14 005	1 588	2 717	4 833	2 484
1968	37 241	2 464	7 197	241	14 082	1 776	3 471	5 229	2 681
1969	41 112	3 061	6 627	265	15 400	1 975	4 617	5 840	3 327
1970	51 238	2 995	12 935	879	16 011	2 734	4 381	6 164	3 486

Source: Thailand. National Education Council. Higher Education Committee. *The present status and problems of higher education during the Second National Socio-Economic Development Plan, report.* Bangkok, 1970. p. 44 (In Thai)

1. Slight discrepancies of statistics with other reports arise from the fact that data were taken at different times.

2. Including law.

Table 2. Number and distribution of teaching staff with highest earned degree [1]

Year	Number of staff with highest earned degree				Total number of teaching staff
	Doctorate	Master's	Bachelor's	Lower	
1967	254	1 162	1 426	84	2 926
1968	259	1 469	1 605	83	3 483
1969	363	1 803	1 907	227	4 300
1970	371	1 973	2 155	227	4 726
1971	390	2 313	2 627	227	5 557

Source: Thailand. National Education Council. Higher Education Committee. *The present status and problems of higher education during the Second National Socio-Economic Development Plan, report.* Bangkok, 1970. p.44 (In Thai)

1. Slight discrepancies of statistics with other reports arise from the fact that data were taken at different times.

Table 3. Total number of graduates at the Bachelor's degree level during the five-year period of the Second Plan 1967-1971

Field of study	Estimate number at the beginning of the plan	Manpower requirement	Number of graduates
Humanities) Fine arts)	2 886	...	2 692
Education	7 030	7 030	7 944
Social sciences [1]	12 469	...	10 652
Natural sciences	1 714	3 300	1 434
Engineering	1 890	2 200	2 925
Medical sciences	3 752	5 960	5 764
Agriculture	1 925	4 400	2 485

1. Including law.

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BIBLIOGRAPHICAL SUPPLEMENT

INTERNATIONAL AND ASIAN REGIONAL CONFERENCES AND MEETINGS RELATING TO HIGHER EDUCATION

CONFERENCES ET REUNIONS INTERNATIONALES ET REGIONALES CONSACREES A L'ENSEIGNEMENT SUPERIEUR

An annotated select bibliography of relevant reports and documents*

Bibliographie annotée de rapports et documents pertinents*

1964 - January / janvier

Association of Southeast Asian Institutes of Higher Learning, Seminar on University Organization and Administration, Hong Kong, 20-24 January 1964. *Report*. Bangkok, ASAIHL, 1964. 173 p.

After a comparative analysis of the various university systems in Asia, the Seminar discussed in what way expansion and modernization, curriculum development, modernized financing and other changes may affect the different types of institutions and how they may cope with the changes. At the end of the Seminar, a long discussion was held on the theme of the role of university in society.

Après une analyse comparée des divers modes d'organisation des universités qu'on trouve en Asie, les participants ont recherché quelles transformations pourraient être provoquées par l'expansion et la modernisation de ces institutions, la mise au point de programmes nouveaux, la modernisation de leur mode de financement, etc. et comment elles feraient face à cette évolution. Le rôle social de l'université a fait l'objet, à la fin du séminaire, d'un long débat.

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* Arranged chronologically according to dates of the events. / Suivant l'ordre chronologique des réunions.

1966 - February / février

Association of Southeast Asian Institutions of Higher Learning Seminar on the Role of Universities in Human Resources Development, Kuala Lumpur, 31 January-February 1966. *Report.* Bangkok, ASAIHL, /1966/ 203 p.

Although it is obvious that the traditional idea of the university needs to be modified, it is obvious too that this modification can be rather dangerous. The stress laid on certain disciplines may become detrimental to quality of the others, as well as to general learning. It was also mentioned that standards should remain objectively determined, and not become flexible as a possible consequence of the need for the application of statistical methods and projection techniques to the problem of precasting manpower demands and enrolment trends.

S'il est évident qu'il convient de modifier la conception traditionnelle de l'université, il ne l'est pas moins que cette transformation risque d'être dangereuse. Si l'on met en vedette certaines disciplines, il peut s'ensuivre une baisse de qualité dans les autres, ainsi qu'au plan de la culture générale. Les participants ont indiqué aussi la nécessité de continuer à déterminer objectivement les niveaux et les normes, et d'éviter que ces derniers ne deviennent fluctuants par suite de l'application - du reste nécessaire - des méthodes statistiques et des techniques de projection pour prévoir les besoins de main-d'oeuvre et l'évolution des effectifs scolaires.

1966 - December / décembre

/The Asia Foundation/ Conference on University Co-operation and Asian Development, University of Hong Kong, 18-21 December 1966. *Proceedings.* San Francisco, /Asia Foundation/ 1967. 202 p.

Papers read at the Conference concerned the needs of Asia, contribution of universities to economic development and to Asian society and the university co-operation in Asia.

Les communications présentées au cours de cette conférence ont porté sur les besoins de l'Asie, la contribution des universités au développement économique et social, et la coopération inter-universitaire.

1966 - December / décembre

Association of Southeast Asian Institutions of Higher Learning Seminar on Goals for Southeast Asian Universities, Bangkok, December 1966. *Report.* Bangkok, ASAIHL, 1968. 169 p.

At the Seminar representatives were gathered from Burma, Hong Kong, Indonesia, Malaysia, the Philippines, Singapore, Thailand and the Republic of Viet-Nam. During the three sessions the reports and discussions covered: A problems and progress, Planning for development, The role of universities in national and regional development.

Les participants à ce séminaire, venus de Birmanie, de Hong-Kong, d'Indonésie, de Malaisie, des Philippines, de Singapour, de Thailande et de la République du Viêt-Nam, se sont consacrés à l'examen des trois thèmes suivants: Problèmes et progrès actuels; Le développement pour la planification; Le rôle des universités dans le développement national et régional.

1969 - February / février

Conference on the Proposal for a Regional Institute of Higher Education and Development, Singapore, 7-10 February 1969. *Report.* /Singapore, Ministry of Education, 1969/ 76 p.

Conférence sur la proposition d'un Institut régional pour l'enseignement supérieur et le développement. Singapour, 7-10 février 1969. *Rapport.* /Singapour, Ministère de l'Education, 1969/ 76 p.

One of the recommendations contained in the 1965 study on the role of universities in Southeast Asia concerned the establishment of an Institute of Higher Education and Development. As a follow-up a Preparatory Commission was set up in 1968, after which the present Conference was convened by the Government of the Republic of Singapore at the request of the Director-General of Unesco and the President of International Association of Universities. The projected activities of the Institute, it was desired, should be limited to conferences, statistics and clearing house activities and research promotion.

L'une des recommandations contenues dans l'étude (faite en 1965) du rôle des universités en Asie du Sud-Est portait sur la création d'un Institut pour l'enseignement supérieur et le développement. Pour y donner suite, une commission préparatoire a été formée en 1968 et, en 1969, cette Conférence a été organisée par le gouvernement de la République de Singapour, à la demande du Directeur-général de l'Unesco et du Président de l'Association internationale des universités. Il y a été décidé que l'Institut s'occuperait seulement d'organiser des conférences, de rassembler des statistiques, de recueillir et de diffuser de la documentation, et d'encourager la recherche.

1969 - August / août

Asian Institute of Educational Planning and Administration Seminar of Experts on University Teaching for Educational Planning, New Delhi, 5-12 August 1969. *Final report.* New Delhi, AIEPA, 1969. 3 v.

Vol. 1 - *Report*
Vol. 2 - *A review of the existing position of the curricula of educational planning in some countries*
Vol. 3 - *Educational planning, a selected annotated bibliography*

In the report of the Seminar the need of interdisciplinary work is emphasized, both in research and in implementation. Suggestions are given as to how this co-operation may be reached, and how data required for the work can be collected. Ways and means are indicated for the Asian Institute of Educational Planning and Administration to catalyse the process. Finally, it is suggested that a number of specified courses be included in given study programmes, and that short-term courses be provided for in-service training.

La nécessité de l'approche interdisciplinaire, au stade de la recherche comme à celui des applications, est soulignée avec force dans ce rapport. Les auteurs suggèrent comment on peut établir pareille coopération et recueillir les données nécessaires; ils indiquent aussi comment l'Institut asien pour planificateurs et administrateurs de l'éducation (AIEPA) peut jouer à cet égard le rôle d'un catalyseur. Enfin, il est recommandé que certains cours soient inclus dans divers programmes d'étude, et que des stages de brève durée soient organisés pour le perfectionnement des professeurs.

1970 - December / décembre

Indian University Association for Continuing Education Conference on Continuing Education and Universities in the Asian and South Pacific Region, University of Madras, 26-30 December 1970. *[Working papers].* Madras, IUACE, 1970. 1 v. (various paging)

The "Working Papers" read by the various delegates outline the position and the activities in continuing education of their respective universities and countries. Various approaches to the problems of methods and financing, both with the university and without are presented.

Les communications présentées par les délégués (groupées sous la rubrique "Documents de travail") décrivent la position et les activités de leurs universités respectives en matière d'éducation permanente, ainsi que diverses solutions proposées pour les problèmes de méthodologie et de financement de l'éducation permanente, tant dans le cadre qu'à l'extérieur des universités.

1971 - May / mai

SEAMEO Seminar on the Evaluation and Recognition of Certificates/Diplomas/ Degrees of SEAMEO Regional Centres and Projects, Chiengmai, 24-27 May 1971. *Final report.* /Bangkok, SEAMEO, 1971/ 112 p.

At the end of the Seminar a number of recommendations were made urging the participating governments to ensure that the qualifications of their nominees to SEAMEO courses be such as to meet the entrance requirements; to recognize the certificates awarded in the same way as established national or international degrees, and to see to it that degree holders are assigned to posts where their training experience is most useful. SEAMEO, in turn, was called upon to enlist the help of other agencies in regard to recognition and equivalences of degrees.

A la fin de ce stage, des recommandations ont été adoptées à l'adresse des gouvernements des pays participants: veiller à ce que les stagiaires qu'ils envoient suivre les cours organisés par la SEAMEO soient d'un niveau correspondant aux conditions d'admission; reconnaître les certificats délivrés à l'issue de ces cours de la même façon que les grades nationaux et internationaux officiels; veiller enfin à ce que ces diplômés soient affectés à des postes où leur compétence sera le plus utile. Réciproquement, la SEAMEO a été invitée à faire appel au concours d'autres institutions en ce qui concerne la reconnaissance et l'équivalance des diplômes.

1971 - July / juillet

/Regional Institute of Higher Education and Development/ Workshop on the Role of Universities in National Development Planning in Southeast Asia. Singapore, 26-29 July 1971. *Role of universities in national development planning in Southeast Asia: proceedings of the Workshop.* Singapore, RIHED, 1971. 199 p.

The purpose of this Workshop has been to explore ways and means in which universities can contribute more fully to the planning and implementation of development programmes in Southeast Asia. To this end, the Workshop focused its attention principally on the research and consulting as well as training inputs from universities in both national planning processes and development programmes. The Workshop was made up of representatives of Indonesia, Khmer Republic, Laos, Malaysia, the Philippines, Singapore, Thailand and the Republic of Viet-Nam, and of the Association of Southeast Asian Institutions of Higher Learning, the Ford Foundation, the International Association of Universities (IAU), the National Institute for Educational Research (NIER), Japan, and the Southeast Asian Ministers of Education Secretariat (SEAMES).

Cette réunion a été organisée pour rechercher comment les universités peuvent apporter une contribution plus importante à l'élaboration et à l'exécution des programmes de développement en Asie du Sud-Est. A cet effet, les participants se sont principalement préoccupés de trois méthodes: la recherche, la consultation, et l'initiation des universitaires aux processus de planification nationale et aux programmes de développement. Ont participé à cette réunion des représentants des pays suivants: Indonésie, République Khmère, Laos, Malaisie, Philippines, Singapour, Thailande et République du Viêt-Nam, ainsi que de cinq organismes: Association des institutions d'enseignement supérieur d'Asie du Sud-Est (ASAIHL), Fondation Ford, Association internationale des universités, Institut national japonais de la recherche pédagogique (NIER) et Secrétariat des ministres de l'éducation d'Asie du Sud-Est (SEAMES).

1971 - December / décembre

Unesco International Expert Meeting on University Teaching and Research on Problems of Peace and Conflict Resolution, Manila, 29 November-3 December 1971. *Final report.* Paris, Unesco, 1971. 28 p. (SHC-71/CONF.8/14)

Unesco Réunion internationale d'experts sur l'enseignement et la recherche universitaires concernant les problèmes de la paix et la résolution des conflits, Manille, 29 novembre-3 décembre 1971. *Rapport final.* Paris, Unesco, 1971. 30 p. (SHC-71/CONF.8/14)

The Meeting was convened to review teaching and research methods with reference to peace and conflict resolution and to consider their inclusion into higher education curricula; to develop networks of institutions engaged in such teaching and research and to review these matters with special reference to developing countries. The meeting adopted resolutions urging Unesco to further research and dissemination of its findings.

Cette réunion avait un triple objectif: passer en revue les méthodes de l'enseignement et de la recherche concernant les problèmes de la paix et la résolution des conflits, et en étudier l'inclusion dans les programmes de l'enseignement supérieur; constituer des réseaux d'institutions ayant de tels programmes d'enseignement et de recherche; et étudier particulièrement ces questions en référence aux pays en voie de développement. Les participants ont adopté des résolutions invitant l'Unesco à intensifier la recherche dans ce domaine.

1971 - December / décembre

ASAIHL. Second Asian Workshop on Higher Education, Singapore, December 1971. /*Proceedings.* Bangkok, ASAIHL, 1972/.

The purpose of the Workshop was to discuss ways and means to further university co-operation in the region, and to implement a system of accreditation and standards acceptable for all universities concerned.

L'objet de cette deuxième réunion de travail était de rechercher les moyens d'intensifier la coopération entre les universités de la région et de mettre au point un système commun d'accréditation et de normes acceptable par toutes les institutions intéressées.

1972 - February / février

/Regional Institute of Higher Education and Development Workshop on/ Management Education in Southeast Asia, Penang, 3-5 February 1972. *Report of the Workshop.* Singapore, RIHED, 1972. 43 p.

The gap between demand and supply of management personnel at all levels being very wide, there is obviously an urgent need for adjustment. The participants set forth a definition of management education, examined the role of teaching institutions in this field and drew up the programme for an expanded workshop to be held soon.

L'écart étant considérable entre l'offre et la demande de personnel de "management" à tous les niveaux, des mesures s'imposent d'urgence pour y remédier. Les participants ont élaboré une définition de "l'enseignement du management", examiné ce que font déjà les établissements d'enseignement dans ce domaine, et tracé le programme d'une réunion élargie qui devrait avoir lieu prochainement sur le même thème.

1972 - April / avril

Unesco Round Table on the Role and Nature of Higher Education in Contemporary Society, Manila, 3-7 April 1972. /*Documents*/ Paris, Unesco, 1972. 1 v. (various paging) (ED-72/CONF.29)

Unesco Table ronde sur le rôle et la nature de l'enseignement supérieur dans la société contemporaine, Manille, 3-7 avril 1972. /*Documents de travail*/ Paris, Unesco, 1972. 1 v. (pagination non suivie) (EN-72/CONF. 29)

The meeting studied the changing role of universities and its responsibilities towards 'the university' and society. The diversification of university level studies, the establishment of new institutions, and the rapid

rhythm of innovation make it necessary to review university governance, including the role - and for the time being, experimentation - of student participation in it. However, bearings should not only be taken on the needs of the 'full-time' university student, but also on those whose studies have to be part-time.

Les participants ont examiné l'évolution du rôle que jouent les établissements d'enseignement supérieur, et leurs responsabilités à l'égard de l' "Université" et de la société. Devant la diversification croissante des études à ce niveau, la création de nombreuses institutions nouvelles et la rapidité du rythme de l'innovation, il devient très nécessaire de reposer le problème du mode de gouvernement des universités, sans oublier le rôle - qui n'est encore qu'expérimental - de la participation des étudiants à ce gouvernement. Toutefois, il importe de tenir compte non seulement des besoins de l'étudiant "à plein temps" d'une université, mais aussi des besoins de ceux qui ne peuvent étudier qu'à temps partiel.

1972 - June / juin

Unesco. Meeting of the Regional Committee for Engineering Education in South Asia, Colombo, 6-9 June 1972. *Working document.* Paris, Unesco, 1972. 14 p. (SC-72/CONF.132/1)

Further to the recommendation of the March 1970 Seminar in Kuala Lumpur on engineering education in Asia, a meeting was held in Colombo to consider the establishment of an "Association for Engineering Education in South Asia to facilitate and stimulate regional co-operation in engineering education and training for purposes of identifying problems, and improving the quality of engineering education." Unesco decided to assist in this matter the groups of countries formed by the Djakarta and New Delhi field science offices. The report of the first meeting of the Djakarta group (4-6 October 1971) is attached to this working document.

En application d'une recommandation formulée lors du Séminaire sur l'enseignement de l'ingénierie tenu à Kuala Lumpur en mars 1970, cette réunion a été organisée à Colombo afin d'étudier la possibilité de créer une "Association pour l'enseignement de l'ingénierie en Asie méridionale", laquelle aurait pour rôle de faciliter et de stimuler la coopération régionale dans ce domaine, afin de mieux cerner les problèmes que pose cet enseignement et d'en améliorer la qualité. L'Unesco a décidé à cet égard d'apporter son concours aux deux groupes de pays desservis par ses Postes régionaux de coopération scientifique de Djakarta et de New-Delhi. En annexe à ce document de travail figure le rapport de la première réunion du "groupe de Djakarta" (4-6 octobre 1971).

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